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affected government indebtedness to the Bank of France may be clearly seen from Table III.

The Treasury has also indirect recourse to the Bank of France when the latter rediscounts Treasury bills, or buys them on the open market or extends advances against the collateral of Treasury bills, as shown in Table III. The Bank of France Treasury bill portfolio consists largely of drafts issued by the Treasury to government suppliers in lieu of cash payments—drafts which have been accepted by the Crédit National and rediscounted with the Bank of France. It is through open-market purchases, however, that the Bank of France has actually operated, these purchases in turn providing reserves for commercial bank credit expansion. However, as will be seen from the table, Bank of France Treasury bill holdings since September 1948 have not been an important source of credit expansion.

Commercial bank portfolios of government securities likewise increased in the last two years, although the rise was much smaller in 1948. These purchases, however, were made to a very large extent under the regulations of September 1948 which made it compulsory for commercial banks to invest 20 per cent of any new deposits (above the level of deposits on September 30, 1948) in short-term government securities.

With the gradual incorporation of investment expenditures and most of the other formerly extrabudgetary accounts into the over-all budget, and with the great reduction of the remaining deficit, the Treasury's recourse to the banking system has been substantially restricted, as clearly appears from Table III. Instead, the deficit has been covered to an increasing extent by new taxation, by the counterpart funds released by the Economic Cooperation Administration, and by long-term borrowing from the public.

B. Bank Credit to Business

In contrast to the extension of bank credit to the government, the expansion of bank credit to business, including medium-term credit to nationalized enterprises, has continued on a substantial scale, as may be seen from Table III. Total credit to business by the Bank of France and the commercial banks increased 523 billion francs between September 1948 and September 1950, or 70 per cent; in the calendar year 1949 the increase was 40 per cent, as against 78 per cent in 1948. However, in the first nine months of 1950, bank credit to business expanded by only 4 per cent.

Commercial bill discounts have been the principal vehicle for the rise in the credit accommodation extended by the commercial banks; and rediscounts of commercial bills by the Bank of France, rather than

open-market purchases of bank acceptances and short-term advances on collateral, have accounted for the bulk of the Bank of France expansion, as may be seen from Table IV. Rediscounts by the Bank of France are divided in this table into those that are subject, and those that are not subject, to the ceiling. The former has increased but little since September 1948; but the latter have risen substantially.

TABLE IV.—BANK OF FRANCE CREDIT EXPANSION TO BUSINESS

(In billions of francs)

	Change during			
	Oct.–Dec. 1948	1949	Jan.–Sept. 1950	Sept. 1948–Sept. 1950
Through open-market purchases of bank acceptances and short-term advances on collateral	+ 3	+ 16	− 6	+ 13
Through rediscounts:				
Subject to ceiling	+44	+ 26	+61	+195
Not subject to ceiling		+105	−41	
Total expansion	+47	+147	+14	+208

As already noted, the September 1948 regulations provided for individual rediscount ceilings for each commercial bank as well as an over-all limit for all banks. The latter, fixed originally at 188 billion francs, was maintained until the early months of 1950 when it was increased to 219 billion francs. Under the September 1948 regulations, however, certain types of bills have been exempted from the ceiling, thus being given unrestricted and unconditional access to the rediscount facilities of the Bank of France. As Table IV shows, it is the rediscounts not subject to the ceiling that have accounted for the rise in Bank of France credit to business.

Recourse to Bank of France rediscounts that are not subject to ceiling is limited, as already noted, to the specific purpose of supplying working capital to industry for re-equipment, to agriculture, and to exporters. Yet once the credit has been created, the reserves of the commercial banking system have been correspondingly enlarged and, subject to the requirement that 20 per cent of the new funds be invested in short-term government securities, the reserves have become in turn available for further credit expansion to business. In this sense, therefore, the restraining effect of an over-all rediscount ceiling has not been absolute since the creation of additional reserves consequent upon the rediscounts that are not subject to ceiling (and, as noted earlier, upon Bank of France open-market purchases) has in turn enabled the com-

mercial banks to expand their discounts and advances along with their deposits. It was by allowing the use of additional reserves that had been generated by Bank of France rediscounts granted *for a few special purposes,* that the authorities actually brought about a *general* credit expansion.

IV. *Credit Expansion and Economic Recovery*

The question thus arises why the French monetary authorities have allowed the "safety valves" provided for in the September 1948 regulations to function so as to result ultimately in a considerable general credit expansion to business. The answer can be sought in the following directions. First of all, the French authorities consider that over-all credit restrictions are a "necessary evil"[12] that can be mitigated only by leaving a special channel open for credit expansion to priority sectors of the economy—the re-equipment of industry, the financing of wheat crops, and the promotion of exports. The policy of credit restriction has thus been applied with moderation and discrimination, and seems to reflect a compromise between the requirements of rigidity in implementing quantitative credit restrictions and the practical necessity of providing working capital for priority sectors of the economy.

The French monetary authorities have, in fact, encountered very considerable resistance in implementing the restrictive credit policy. A relaxation, particularly in the form of a lifting of the ceiling on commercial bank rediscounts at the Bank of France, had been repeatedly advocated in the Paris financial press and by certain business groups. In April 1950, the National Assembly, after a brief debate, formally requested the government to relax the restrictive credit policy, despite the warning of the Secretary of State for Economic Affairs that such a course of action would be inflationary. However, the government and the Bank of France, prior to the outbreak of the Korean crisis, avoided a relaxation of controls, with one minor exception that will be noted later; and the profound change in economic climate consequent upon world rearmament has made the maintenance of over-all credit restrictions mandatory.

Great weight is attached in France to the argument that if employers were confident of their ability to obtain new credit, they would be less firm in their resistance to new wage demands. Under conditions of full employment, it is argued, wage demands are likely to be resisted more effectively if recourse to bank credit remains restricted. The restrictive credit policy since September 1948 has gone *pari passu* with the main-

[12] *Quatrième Rapport Annuel du Conseil National du Crédit* (Paris, 1950), Conclusions.

tenance of wage stability as a matter of anti-inflationary policy. Although wages remained on the whole stable in 1949, no large-scale labor unrest developed. Taking into account the family allowances and other social security benefits, real wages are believed to have been restored to the prewar level. Nevertheless, the standard of living of the broad masses of French population, except for food, is low for a great industrial nation. It was presumably for this reason that in February 1950, simultaneously with France's return to collective bargaining, wage rates were increased on the average by 5 per cent, with provision for their subsequent supplementing, in both public and private enterprises, by bonuses for productivity. It was anticipated that the restoration of collective bargaining would lead to the establishment of wage differentials and thus improve labor productivity and mobility. The freeing of wages may therefore be regarded as a final step in France's policy of eliminating controls over the internal economy.

While allowing a continued credit expansion to business, however, the French authorities have consistently endeavored to channel the new credit into the priority sectors of the economy, to prevent the resulting over-all expansion from exercising inflationary pressure.

With a view to such a channeling of new bank credit, recourse has been had to qualitative credit controls. These controls, established in 1947 and strengthened in September 1948 in conjunction with the imposition of quantitative restrictions, consist principally of two parts. First, commercial banks must obtain extensive supporting data from the borrower, and must stand ready to justify to the Bank of France, any credit whether advance or discount that exceeds a certain amount;[13] and secondly, they must submit to the Bank of France for prior approval all requests for credits other than discounts that would bring total borrowings of this type by any individual firm above 100 million francs.[14] Prior to April 1950, this limit was 50 million. This particular relaxation has thus far been the only concession that French authorities have made in the over-all controls.

The composition of bank credit as regards the broad groups of the French economy may be seen from Table V[15] The total volume of

[13] Two million francs for advances, 5 million francs for discounts. Prior to September 1948, discounts were excepted from this restriction.

[14] Discounts are not subjected to prior approval by the Bank of France, with the exception of certain special types of commercial bills ("supplier paper" or "indirect discounts").

[15] Data on the volume of credit, covering over 75 per cent of total credit outstanding, classified by groups of industry in considerable detail, are compiled by the Service for Centralization of Banking Risks (Service de la Centralisation des Risques Bancaires), a division of the Discount Department of the Bank of France. It is from this centralization of data on bank credits that individual commercial banks can learn the total amount

bank credits increased in 1949 by 50 per cent. The largest rise was in credits earmarked for equipment; of 88 billion francs of such new credits, 62 billion were extended to the private economy, largely for modernization and re-equipment, while 26 billion were granted to nationalized enterprises, almost entirely for the purpose of refinancing previous credits extended by the Treasury. Of the total bank credits outstanding, nationalized enterprises received about 13 per cent—a figure of much the same magnitude as these enterprises' share in the general economic activity of the country, whether measured by the

TABLE V.—COMPOSITION OF BANK CREDIT

Purpose	Amount outstanding in billions of francs		Per cent change
	Dec. 1948	Dec. 1949	
Equipment	125	213	+70
Imports	89	127	+42
Agriculture	119	177	+48
Subtotal	333	517	+55
All other	309	443	+44
Total	640	960	+50

business turnover (about 13 per cent) or by the labor force employed (about 10 per cent). If credits for imports outstanding at the end of 1949 (127 billion francs) are compared with the total value of imports in that year (922 billion francs), they apparently represent about one month and a half of imports. The 42 per cent rise in 1949 reflects partly the reconstitution of stocks, partly price increases reflecting the franc devaluation. The increase in credits to agriculture was due, of course, to the excellent wheat crops, farmers' deliveries being largely financed through an official discount institution. The other credits given on the fifth line of Table V represent the working capital of industrial enterprises.

This credit policy of reliance on selective discrimination has been reinforced by high interest rates. The return to a dear money policy appears all the more significant when it is realized that the official discount rate was reduced in 1945, despite the obviously large need for bank credit, to an all-time low of 1⅝ per cent, at a time when there were no credit restrictions whatever. The cheap money policy was

that each of their customers has borrowed from other banking institutions, and the Bank of France and the National Credit Council receive current data on the volume of credit authorized and utilized.

abandoned in 1947, the official discount rate being gradually raised to 3 per cent; it was reduced to 2½ per cent on June 8, 1950.[16]

The rates charged to bank customers are related to the Bank of France discount rate. For instance, banks charge a commission of 0.60 per cent per annum for the discounting of prime commercial paper; and since, prior to the recent change, the official discount rate was 3 per cent a year, the rate actually charged by banks was at least 3.60 per cent. The rates on advances, overdrafts, and other loans varied between 6 and 8 per cent. The two official institutions, the Crédit National and the Crédit Foncier, that specialize in middle and long-term credits have moved in line with the upward trend of rates, the former now charging 7 per cent for 2 to 20-year loans, the latter about 8 per cent for its mortgage loans. Large industrial borrowers who succeed in getting permits to raise new capital have to pay about 6½ per cent on 30-year bonds, with the real cost over 8 per cent.

Great emphasis was placed in the preceding section upon the expansion in Bank of France rediscounts not subject to ceiling. However, such rediscounts take place at a rate one per cent higher than the official discount rate. Accordingly, the very fact that the Bank of France has extended additional credit through this type of rediscount rather than through rediscounts subject to ceiling has been tantamount to a one per cent rise in the rate of interest at which the banks have been able to obtain additional accommodation.

The recent expansion of credit that the authorities have seemed to endeavor to keep within bounds through their dear-money and selective-credit policies may be essentially a reflection of the need of business for working capital. The consolidation of the price increases brought about by postwar inflation appears to have given rise to a shortage of working capital since larger funds than heretofore are now required for the payment of wages, holding of stocks, and granting of credits to customers.[17] Furthermore, an empty economy (to use Hicks' expression)

[16] The Bank of France rates since 1945 have been as follows:

	Jan. 19, 1945	Jan. 10, 1947	Oct. 9, 1947	Sept. 4, 1948	Sept. 30, 1948	June 8, 1950
Discount rates:						
Treasury bills* and genuine commercial bills	1.625	1.75	2.5	3.5	3.0	2.5
Other paper		2.25	3.0	4.0		
Advances against securities	2.75	3.25	4.25	4.5	4.5	3.75
30-day advances	1.625	1.75	2.5	3.5	2.5	2.5
Open-market purchases (3-month Treasury bills*)	—	—	—	—	2.5	2.5

* Including similar paper, such as "traites" accepted by the Crédit National.

[17] For what they may be worth, the following statistical indications seem to reflect a shortage of means of payments in an economy operating at an all-time record level. In

which in a lapse of two years has become an economy of abundance requires of necessity additional working capital.

On the other hand, the financing of the investment in fixed capital by bank credit, which was one of the principal sources of inflation in 1946 and 1947, was greatly reduced in the last two years. Unfortunately, it appears impossible to give a comprehensive picture of the rôle of bank credit in financing France's fixed investment as a whole. A clear indication can, however, be obtained as to the financing of France's Plan for Modernization and Re-equipment (the so-called Monnet Plan), which has now been in full operation for four years.[18] Table VI shows total investments under the plan, and the methods of financing.

Of the total investment of 1,000 billion francs financed under the Monnet Plan from 1947 to 1949, 540 billion francs was supplied from public funds. Of this total, the counterpart funds released by the Economic Cooperation Administration furnished over one half—329 billion. As may be seen from the Table VI, increasing reliance has been gradually placed on the self-financing of the nationalized and private enterprises, but new capital issues have accounted thus far for only a small part of total financing. Bank credit, as appears from the last lines of the table, was particularly important in 1947 when 48 per cent of total investment was financed by borrowing from the banking system; in 1948, 10 per cent was thus financed, and in 1949, 8 per

terms of the 1938 franc, the present money supply is appreciably below prewar. For instance, at the end of 1949 note circulation and sight deposits were equivalent to 135 billion 1938 francs, as against 192 billion actually outstanding at the end of 1938; note circulation alone amounted to 65 billion 1938 francs, as against 112 billion in 1938. Bank deposits are about the same as in 1938; allowing, however, for the rise in production since 1938, it is probable that bank deposits, too, are not yet on the pre-war scale. That the money supply is now relatively smaller than before the war may also be inferred from the fact that in 1949 it was equal to 39 per cent of France's national income, as against 52 per cent in 1938. The inadequacy of the means of payment, as measured at prewar prices, is partly offset, however, by the increased velocity of circulation of bank money, which since April 1949 has been at the rate of about 1.5, as against 1.24 at the end of 1948 and 1.0 in 1938. The prevailing high level of short-term money rates seems to be an additional indication that the money supply has not yet reached an equilibrium level at which it might settle down.

[18] This plan was originally devised to speed up the rate of investment in six key industries—coal, electric power, steel, cement, agricultural machinery, and transport. As the plan evolved, it was extended to other branches of industry, either because they were found to be essentially offshoots of the original six or because further expansion was needed in order to balance France's external accounts. Agriculture has thus been added to the "basic" category, together with oil and fertilizers; economic development in France's overseas territories has also been drawn into the orbit of the plan; and special attention has been given to the chemical, nonferrous-metal and rayon industries. For a brief outline of the plan and its execution, reference may be made to Pierre Uri's contribution on "France: Reconstruction and Development" in Howard S. Ellis, *The Economics of Freedom* (New York, 1950). The Commissariat of the Plan issues public reports at regular intervals on the execution of the plan.

cent. The resort to bank credit for financing long-term investment in fixed capital has thus been greatly curtailed.

Available evidence points to the conclusion that the Monnet Plan, undertaken as it was in the absence of a sufficient budget surplus and adequate voluntary saving, has been inflationary to the extent that recourse has been had to bank credit; but the financing through bank credit has been gradually but vigorously supplanted, on the one hand,

TABLE VI.—INVESTMENT UNDER THE MONNET PLAN AND METHODS OF FINANCING

(In billions of francs)

Method of Financing	1947	1948	1949	Total
Government receipts and borrowing[a]	8	188	344	540
Of which ECA counterpart funds	—	*104*	*225*	*329*
Self-financing	30	80	104	214
Capital issues[b]	34	27	41	102
Bank credit	66	33	45	144
Total investment	138	328	534	1,000
Bank credit as percentage of total investment	48%	10%	8%	14%

[a] Apart from ECA counterpart funds, which are shown separately, this item consists of tax receipts earmarked for Monnet Plan expenditures and long-term capital issues by the Treasury.

[b] By nationalized and private enterprises; Treasury issues are included under "government receipts and borrowing."

by budgetary tax receipts earmarked for Monnet Plan expenditures and by Treasury long-term capital issues, and on the other, by capital issues by nationalized and private enterprises and by their own self-financing. The ECA counterpart funds have been paramount in this regard. However, as Marshall Aid tapers off and the counterpart funds available for investment subside correspondingly, France will have to face, altogether apart from the problem of equilibrating its payments with the dollar area, a difficult problem of internal monetary balance.

The traditional saving which in the past was a big factor in France's economic and social strength seems now to be reviving.[19] Although the

[19] Savings have been as follows:

(In billions of francs)	1948	1949
Increase in deposits with savings banks	84	90
Increase in time deposits with banks	6	20
Net subscriptions to Treasury bills with progressive interest rates	10	30
Funds invested through life insurance and capitalization companies	15	20
Subtotal	115	160
Net subscriptions to capital issues	144	120
Total	259	280

Savings of 280 billion francs, as shown above, correspond to only 4 per cent of France's national income in 1949.

flow of saving is still much smaller in proportion to national income than before the war, it seems now to be taking forms that make it available for investment on the money and capital market. As long as prices were rising rapidly, savings went into private gold hoards[20] or real assets, while a certain clandestine export of capital also took place. With the gradual re-establishment of an internal economic balance, savings appear not only to be increasing but also to be seeking productive investment in France; and, furthermore, some French capital hiding abroad seems to have been repatriated. However, the gap between the present flow of savings and actual investment still looms very large. With the inevitable reduction in ECA counterpart funds, current savings will have to increase substantially—despite the high level of personal taxation—to be sufficient to finance the requirements of modernization and re-equipment of France's economy without recourse to continued bank credit expansion.

V. *A Preliminary Appraisal*

France's experience with credit control seems, accordingly, to warrant the following conclusions:

1. Despite credit control, the money supply has continued to expand. To some extent the rise in the money supply is due to the influx of foreign exchange which, in turn, reflects the improvement in France's balance-of-payments position. It may be of interest in this connection to quote from the conclusion of the annual report of the National Credit Council for 1948, which attaches great importance to the improvement in the balance of payments as a means for easing internal credit conditions:

> Internal credit should not be called on to provide, alone, the basis for, and the counterpart of, the necessary increase in the volume of money; it is also desirable that circumstances permit a reinforcing of the foreign exchange reserves of the Bank of France, and with it a reconstitution both of the means available for international settlements and of a currency circulation that has an unassailable backing.[21]

These principles of policy, put forward early in 1949, have since been confirmed by the reconstitution of France's foreign exchange reserves consequent upon the gradual re-establishment of its international balance.

[20] French sources, quoted by the Bank for International Settlements in its annual report for the year ended March 31, 1949 (page 155), put private gold hoards in France at the beginning of 1949 at about 2.2 billion dollars, as against 1.1 billion in 1939. In addition, Frenchmen have been privately holding sizable amounts of gold in foreign countries. Total privately held gold by Frenchmen is stated to amount to 2.5-3.0 billion dollars.

[21] *Troisième Rapport Annuel du Conseil National du Crédit* (Paris, 1949), p. 8[illegible]

2. The bulk of the rise in the money supply is, however, attributable to the intermittent recourse by the Treasury to the banking system and especially to the continued credit expansion to business. For credit restrictions to be effective, it is essential that the Treasury be able to finance its expenditures, including capital expenditures, without borrowing from the banking system. By the middle of 1950, prior to the outbreak of the Korean crisis, the stability in French government finances seemed assured for the time being, provided that anticipated tax receipts were actually forthcoming, that government expenditures were kept within the budgeted limits, that counterpart funds were released by the Economic Cooperation Administration, and that such long-term borrowing from the public as the 1950 budget contemplated actually proved feasible. Granted these conditions, one of the real handicaps against which credit control in France has had to contend would seem to have been largely removed. After Korea, with the rearmament effort that France has undertaken along with other Atlantic Pact nations, an acute problem of deficit financing has arisen again; but at this writing (November 1950), it is impossible to appraise the impact of rearmament upon France's economy.[22]

3. With reconstruction and development as a primary policy objective of the government, French credit policy has endeavored to reconcile monetary stability with the requirements of financing investments. "Credit policy must seek to harmonize the requirements of monetary rehabilitation with those arising from economic and social developments."[23] This presumably is why the control of credit has actually been so implemented as to prevent an indiscriminate credit expansion while leaving the way open, through various "safety valves," to credit expansion for priority sectors of the economy, namely the reequipment of industry, the movement of crops, and the financing of imports and exports. The Bank of France has thus prevented large-scale resort to rediscounting by industry and commerce generally, thus facilitating the over-all stabilization of prices and wages; at the same time, however, it seems to have aimed at ensuring adequate working

[22] In a note submitted to the United States government on August 5, 1950, the French government expressed the view that ". . . monetary stability, the preservation of a balanced budget and the maintenance of an adequate standard of living must be considered as elements of major importance in our defense potential. Indeed, Article 2 of the Atlantic Pact provides for close cooperation between the signatory countries in these fields. Thus, whatever the sacrifices imposed upon our population, the new effort cannot be realized without contributions of armaments, raw materials, and equipment from outside, and without substantial financial aid." On the other hand, the United States obviously cannot bear the entire burden of European rearmament. In any event, it is clear that a new phase of international economic relations opened in the fall of 1950.

[23] *Quatrième Rapport Annuel du Conseil National du Crédit,* Conclusions.

capital to the priority sectors of the economy, which in turn has facilitated appreciable progress in industrial and agricultural production and exports. This policy seems to reflect a compromise between the requirements of rigidity inherent in any effective credit restriction, and the practical necessity for flexibility under modern political, economic, and social conditions. French experience thus shows that, in present-day society, credit restrictions can be applied only with a measure of discrimination in accordance with over-all economic policies.

4. The expansion of bank credit to business in an environment of growing agricultural and industrial production, with prices generally stable amid indications of a returning buyer's market, as in France by the middle of 1950, clearly cannot be given the same interpretation as one brought about by government deficit financing or by fixed investment financing, whether public or private, under conditions of scarcity, speculative hoarding of goods, and a flight into "real assets." Furthermore, unlike 1946 and 1947 when recourse was had to bank credit to finance about one half of the investment in fixed capital, the expansion of credit to business in the last three years was primarily motivated by the necessity to replenish the working capital of industrial enterprises that had been largely wiped out by price inflation. The expansion in the money supply brought about by the creation of credit to business and, as noted earlier, by the acquisition of foreign exchange, appears to be fundamentally the result of revived confidence in the franc and of the French economy's reconstitution of liquid funds that had been reduced to a bare minimum while the currency was losing value. These factors have been important offsets to the upward pressure upon prices that had been exerted by the comparable expansion of the money supply in earlier years. To maintain the accomplishments attained since 1948, and to consolidate and expand them, seemed before the Korean crisis the crucial test of France's economic and financial policies.

5. Along with Belgium, Italy, and Germany, France has achieved internal balance and has attained over-all external equilibrium (but not a dollar balance) primarily through monetary policy, while discarding direct controls on domestic consumption and production and at the same time appreciably alleviating the controls over imports and payments abroad. The retreat from direct controls seems to have been the only course of effective economic policy open to a nation with the individualistic spirit of the French and with their experience of "endemic disorder"[24] under controlled economy. The credit restrictions

[24] *Cf.* Pierre Dieterlen, in collaboration with Charles Rist, *The Monetary Problem of France* (The Carnegie Endowment for International Peace, New York, 1948). What the

have compelled traders to release speculative stocks of goods, and exporters to sell to the authorities the full amount of their export proceeds. They have thus contributed to the elimination of the shortage of goods at home, the halting of the rise in prices, and the cutting of the balance-of-payments deficit. By restoring the regulatory power of money, operating through the price mechanism, as the main regulator of economic activities, the French authorities have thus accomplished a notable achievement under conditions of great political and social strain. It may be regarded as a practical demonstration that economic liberalism can be revived in Western Europe—a demonstration that the post-Korean international emergency must not be allowed to obscure.

6. France's experience with monetary and credit controls, together with that of Belgium, Italy, and Germany, has prompted other Western European nations both to make interest rates more flexible and to restrict credit. Since the outbreak of the Korean crisis, commercial bank reserve requirements have been introduced in Sweden and the Netherlands (and in early 1951 were under consideration in Norway). Discount rates have been raised in Denmark, Sweden, and the Netherlands (and also in Canada) for the first time in postwar years, as well as in Belgium, Germany, and Finland, where the discount rate weapon was already in use. Long-term interest rates have been allowed to rise in several countries, including Sweden and Norway, that had previously supported the market for long-term government securities. Monetary and credit controls, in conjunction with fiscal policy measures, have thus become the first line of defense against the new menace of inflation arising out of accelerated rearmament in an unsettled world.

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suppression of the price mechanism meant for France's domestic economy and international balance may be judged by the following extract from Pierre Uri (*op. cit.*, p. 256): ". . . in most sectors of the economy price fixing was little respected; only certain basic products and sectors were subject to effective control. The result was price distortions which were particularly harmful to economic recovery; for their effect was to discourage the production of basic commodities, to hinder investments in the basic sectors by depriving the latter of the necessary means of self-finance, and to make production in subsidiary sectors appear the more profitable."

ON THE MEASUREMENT OF INCOME INEQUALITY

By ROBERT R. SCHUTZ*

There exist various measures of income inequality, including the Pareto and Gini coefficients and graphic representations, the Lorenz curve and the Gini ratio of concentration associated with it, several semi-logarithmic representations and others.[1] While occasional use is made of all of these coefficients and graphic devices, by far the most common over-all measurement of income inequality is found in the Lorenz curve mechanism, although it may be called a coarse and even an ambiguous measure of this important phenomenon. An attempt will be made in this paper to sharpen the concept of inequality and to set forth one or two simple refinements on the Lorenz curve technique which may lend precision to the measurement of inequality.

Equality of income distribution is found when every income-receiving unit receives its proportional share of the total income. The income-receiving unit may be further defined as an individual or a family head or a consumption unit, and may include persons at law such as corporations or not, as suits the preference of the investigator. Also, the concept of income receives a variety of treatments in the hands of different investigators; it may include various imputed items, the value of gifts and services received or self-performed; it may exclude reserves for capital depreciation, various expenses, contributions, taxes, gifts in kind; it may average in losses or not, depending on the length of the accounting period, and so on.

We will not attempt here to determine a "best" definition of the income-receiving unit, or of the concept of income itself, since it is recognized that different definitions may be required for different purposes, and the exigencies of various investigative situations may forbid the gathering of more inclusive and even superior data. It should be urged, however, that one of the legitimate ends in the study of income

*The author is a graduate student at the University of California, Berkeley. He acknowledges the helpful criticisms and suggestions of Mary Jean Bowman, William L. Crum, William J. Fellner and Earl R. Rolph.

[1] For an adequate description of these measures, see Bowman, Mary Jean, "A Graphical Analysis of Personal Income Distribution in the United States," *Am. Econ. Rev.*, Vol. XXXV, No. 4 (Sept., 1945), pp. 607-28, reprinted in *Readings in the Theory of Income Distribution* (Philadelphia, Blakiston, 1946).

distribution is the comparison of inequality among distributions. Comparisons may be desirable following a change in taxation, or an outburst of union activity, or imposition of a farm income support plan, or institution of a new indigent-care program, or simply over time or space without imputation of causation. Such comparisons, of course, are dependent upon comparable definitions of income and of receiving units for validity. Data presently available are seriously lacking in such comparability.

Inequality may be defined as any deviation from equality. Thus, if any person received less than his proportionate share of the aggregate income, the distribution would be unequal. Furthermore, under these circumstances, some one or more other persons would have to receive as much more than his or their proportionate share(s) as the first person received less.

These simple propositions give rise to the first refinement I would propose on the Lorenz curve technique of showing inequality. It will be remembered that the Lorenz curve is based on a ranked cumulative distribution in both directions, *i.e.*, of income and numbers of recipients, giving rise to the accompanying familiar diagram:

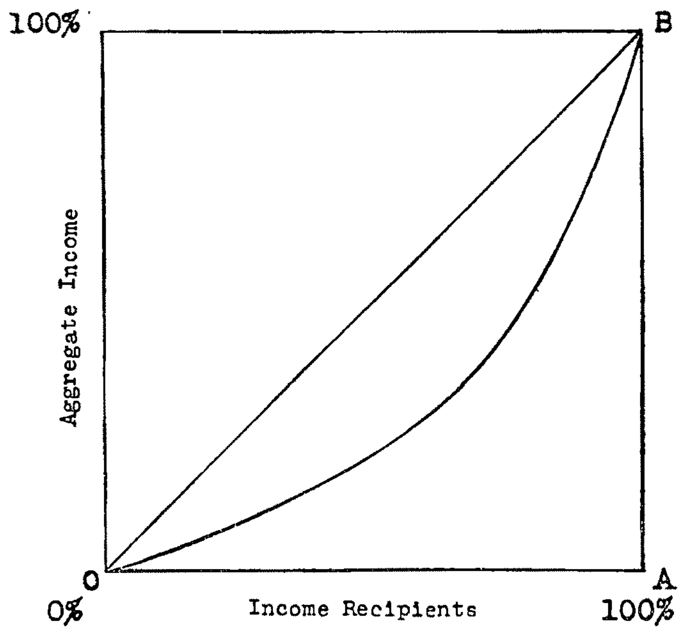

FIGURE 1. A LORENZ CURVE

Here, inequality is shown by the distance between the straight line

and the curve connecting points O and B. The Gini ratio of concentration is found by dividing the area between this line and curve by the triangular area OAB. Objections to the crudity and ambiguity of this measure arise from the fact that the shapes of these areas may be infinitely varied, due to different distributions of the inequality, without being particularly apparent to the eye, and without any change at all in the value of the ratio of concentration.

If, now, we measure inequality by comparing the amounts of income that individuals or groups get with their proportionate-equal

TABLE I.—A HYPOTHETICAL SIMPLE INCOME DISTRIBUTION

Order	Income Recipients				Income				Slope (8÷4)	(Slope−one) X Per Cent
	Number in Category		Per Cent in Category		Amount Received		Per Cent of Total			
		Cumulative		Cumulative		Cumulative		Cumulative		(Coefficient)
1	2	3	4	5	6	7	8	9	10	11
1	1	1	10	10	$ 20	20	2	2	0.2	−8.0
2	1	2	10	20	50	70	5	7	0.5	−5.0
3	1	3	10	30	80	150	8	15	0.8	−2.0
4	1	4	10	40	100	250	10	25	1.0	0
5	1	5	10	50	100	350	10	35	1.0	0
6	1	6	10	60	100	450	10	45	1.0	0
7	1	7	10	70	100	550	10	55	1.0	0
8	1	8	10	80	120	670	12	67	1.2	2.0
9	1	9	10	90	150	820	15	82	1.5	5.0
10	1	10	10	100	180	1,000	18	100	1.8	8.0

shares, we shall be dealing not with the Lorenz curve, or with its aggregate functions, but with the slopes of that curve at the various points we choose to investigate. While it is quite true that the slope of a curve at various points gives us no more information than the curve itself, I believe it will be seen in what follows that it is the slope which is directly concerned with what we wish to measure: inequality. And the direct comparison of the slopes at various points will give us a clearer picture of inequality than is ordinarily derived from the Lorenz curve. It will be admitted at once, however, that a careful study of the Lorenz curve with particular attention to the slope of the curve at various points, and without the emphasis on the comparison of areas contained in the ratio of concentration will elicit the same information, albeit in a less apparent form, as will be given by a curve of slopes.

A simplified income distribution (Table I, disregarding Column 11 for the moment) with its corresponding graphs illustrates these points.

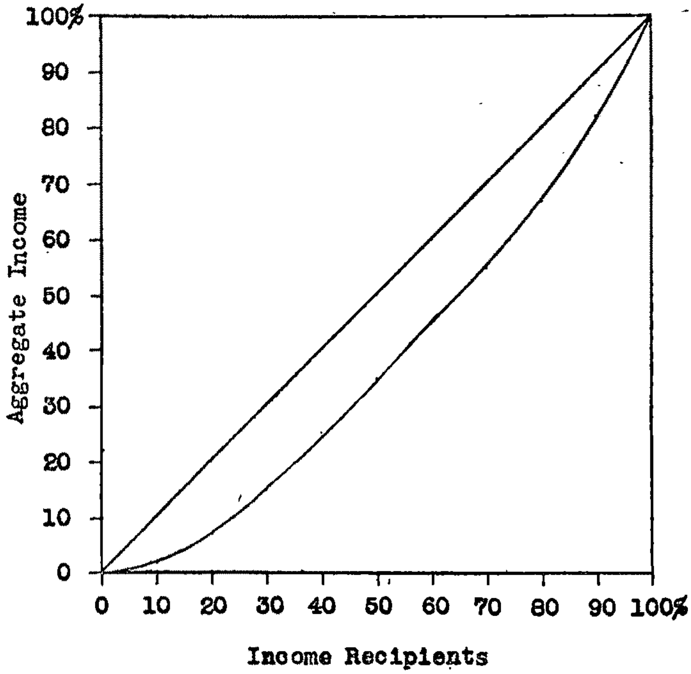

FIGURE 2. A LORENZ CURVE
Source: Columns 5 and 9 of Table I

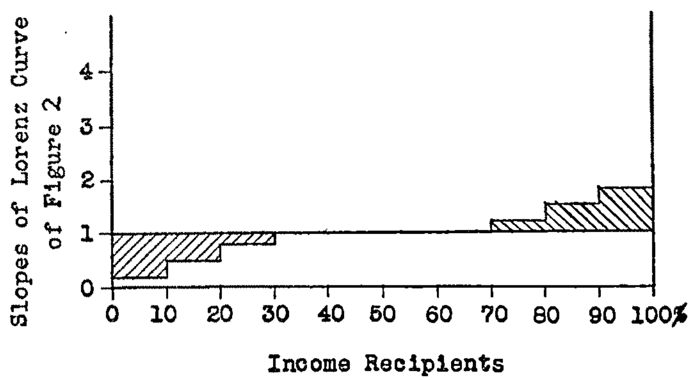

FIGURE 3. EQUALITY AND INEQUALITY CURVES COGNATE TO LORENZ DIAGRAM OF FIGURE 2
Source: Columns 5 and 10 of Table I

The Lorenz curve (Figure 2) is drawn from Columns 5 and 9 of Table I, ranked from lowest incomes to highest and cumulative in percentage. The corresponding curve of slopes at the various points (Figure 3) is drawn from Columns 5 and 10 (the latter is Column 8 divided by Column 4).

Now it will be noted that a straight line is drawn in Figure 3 at tan 45° = 1. This is the line of equality with which to compare the slopes at points in the income distribution which are unequally situated. It corresponds to the 45 degree line usually drawn in the Lorenz graph. It will be further noted that the areas on either side of the line of equality (tangent equals 1), lying between it and the curve of slopes, seem equal. That these areas are equal will become apparent upon a moment's reflection, when it is realized that in a cumulative distribution any member who receives less than his equal or proportionate share must be compensated for by one or more members who receive as much more than their equal share(s) as he did less. Thus it will be seen that total inequality, if any expression for such a phenomenon is meaningful at all—and it has long been measured as significant in the Gini ratio of concentration and other coefficients—can be measured by looking at either the "overs" or the "unders," since these are necessarily equal.

Also, here is another coefficient, the area between the line of slopes and that line denoting equality (tangent equals one), either half or all of which may be used to measure over-all inequality. This shaded area (Figure 3) is easily computed, roughly, by multiplying the distance between the two slope lines (for unequal and equal points) by the distance (in percentage of recipients) over which this slope may be assumed to hold good, that is, until the next point is reached. This is the derivation of Column 11 in Table I, which reads: (slope minus one) times (per cent), or Coefficient.[2] The sum of the negative numbers equals that of the positive, and either of these sums or their numerical

[2] This is, of course, the necessarily crude, and somewhat inaccurate form for computation of the Coefficient from actual figures in a finite number of categories. It reduces to the formula $\sum_{x=0}^{x=x_1}(\Delta x - \Delta y)$, where x is the percent of income receivers and y the percent of aggregate income received, and x_1 the point at which $\frac{\Delta y}{\Delta x} = 1$. Since the size of the Coefficient will vary with the size of the income categories used, precision may be attained by resort to the infinitesimal calculus. In this notation the formula for the Coefficient becomes $\int_0^{x_1}[1 - f'(x)]dx$, where x_1 is defined by $f'(x_1) = 1$. (The line of equality is represented in the Lorenz diagram by $y = x$; the curve of the distribution by $y = f(x)$.) Integrating from 0 to 100% would give a total of zero, since negative inequality would then cancel positive. The total referred to in the next sentence of the text is twice this formula for the Coefficient. The formula for Coefficient of inequality may be compared with Gini's concentration ratio for the Lorenz diagram, which can be written $\frac{2\int_0^{100}[x - f(x)]dx}{10{,}000}$. The integral expresses the area lying between the Lorenz curve and the line of equality; and this area is divided by the area OAB in Figure 1, that is, by one-half of the product of the two axes up to 100.

total (disregarding sign) may be used as a coefficient of inequality. The characteristics of this coefficient indicate the manner in which data from the high end of the income scale may be deemed to describe the total inequality in an income distribution.

It will be noted that the Lorenz representation of the inequality in the distribution of Table I looks decidedly asymmetrical, whereas the curve of slopes, and the data themselves seem to indicate the symmetrical distribution of inequality. This is due to the characteristics of cumulation, and will be discussed further in connection with negative incomes below.

Table II and Figures 4 and 5 illustrate the presently described techniques with the data of an actual income distribution in the United States.

TABLE II.—PERCENTAGE DISTRIBUTION OF CONSUMER UNITS AND OF AGGREGATE INCOME RECEIVED, BY INCOME LEVEL, 1935–36

Income Class	Consumer Units		Aggregate Income		Slope (4÷2)	(Slope−one) X Per Cent (Coefficient)
	Per Cent at Each Level	Cumulative	Per Cent at Each Level	Cumulative		
1	2	3	4	5	6	7
Under $250	5.38	5.38	0.50	0.50	0.0929	−4.88
250– 500	11.63	17.01	2.98	3.48	0.2562	−8.65
500– 750	14.63	31.64	6.10	9.58	0.4170	−8.53
750–1,000	14.90	46.54	8.65	18.23	0.5805	−6.25
1,000–1,250	12.65	59.19	9.42	27.65	0.7447	−3.23
1,250–1,500	9.49	68.68	8.62	36.27	0.9083	−0.87
1,500–1,750	7.32	76.00	7.87	44.14	1.0751	0.55
1,750–2,000	5.82	81.82	7.11	51.25	1.2216	1.29
2,000–2,250	4.32	86.14	6.08	57.33	1.4074	1.76
2,250–2,500	3.18	89.32	5.01	62.34	1.5755	1.83
2,500–3,000	3.74	93.06	6.76	69.10	1.8075	3.02
3,000–3,500	2.16	95.22	4.62	73.72	2.1389	2.46
3,500–4,000	1.27	96.49	3.14	76.86	2.4724	1.87
4,000–5,000	1.17	97.66	3.45	80.31	2.9487	2.28
5,000–7,500	0.96	98.62	3.79	84.10	3.9479	2.83
7,500 & over	1.38	100.00	15.90	100.00	11.5217	14.52
Total negative coefficient						−32.41
Total positive coefficient						32.41

Source: U. S. National Resources Committee, "Consumer Incomes in the United States," (Washington, Government Printing Office, 1938). Data for Columns 2, 3, 4, and 5 are given in Table 2, page 6. The others were calculated for this study.

Study of Table II and of Figures 4 and 5 reveals at a glance the well-known preponderance of inequality at the upper end of the income scale. It is further apparent that this inequality can be compared directly with that of other distributions, not only by the total coefficient,

a cognate of which has been the most commonly used mode of such comparison in the past, but by the size of the slopes, or of the areas indicated by the coefficients in various segments with base lines (per cent of the population) of equal length (*i.e.*, same relative numbers involved). In this connection, the extreme variability in size of the groups reported (minimized in the Table by lumping together "$7500 & over") will be noted. It is suggested that comparison would be greatly facilitated if the data of the various studies were arranged ac-

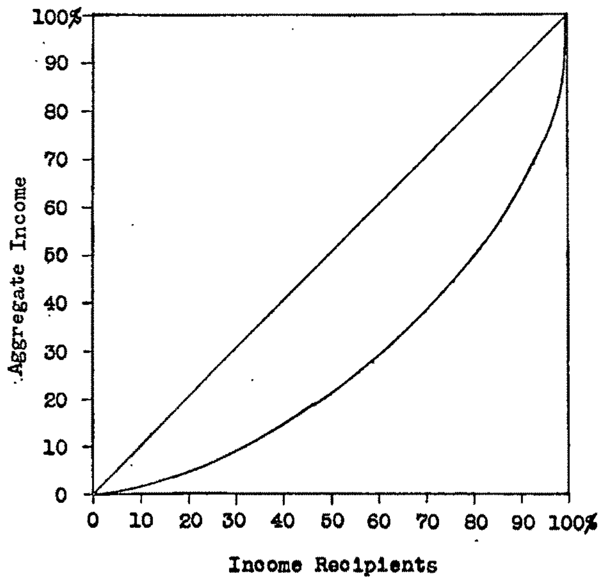

FIGURE 4. LORENZ CURVE OF 1935-36 INCOME DISTRIBUTION
Source: Columns 3 and 5 of Table II

cording to percentage of the total number involved—probably 1 per cent intervals would be adequate for most purposes—rather than in the arbitrary and variable-sized income categories now used.

With further elaboration the technique proposed may be extended to the study of inequality among and within groups classified in various ways, and to the inclusion of negative income. Multiple-way classification can be made, so long as an individual is counted but once in all of the classes. For example, one can arrange all income recipients in the order of the amounts they receive. One can further subdivide them according to their sex. Then there will be two areas below, and two above the line of equality (in the slopes diagram) if, within the sex classification, they are still arranged in order of increasing incomes.

A state classification could then be imposed on the previous two,

TABLE III.—A NUMERICAL EXAMPLE OF DOUBLE CLASSIFICATION FROM THE 1935–36 DISTRIBUTION OF INCOME BY INCOME LEVELS FOR FAMILY AND SINGLE UNITS IN THE UNITED STATES

Income Level	Family Units		Aggregate Income				Single Units		Aggregate Income			
	Per Cent of Total Consumer Units	Cumu-lative	Per Cent at Each Level	Cumu-lative	Slope (4÷2)	(Slope—one) X Per Cent (Coefficient)	Per Cent of Total Consumer Units	Cumu-lative	Per Cent at Each Level	Cumu-lative	Slope (10÷8)	(Slope—one) X Per Cent (Coefficient)
1	2	3	4	5	6	7	8	9	10	11	12	13
								(From Col. 3 74.5)		(From Col. 5 80.5)		
Under $250	2.9	2.9	0.2	0.2	0.0782	−2.71	2.4	76.9	0.3	80.8	0.1111	−2.16
250– 500	7.6	10.6	2.0	2.2	0.2579	−5.67	4.0	80.9	1.0	81.8	0.2538	−2.97
500– 750	9.6	20.2	4.0	6.2	0.4174	−5.61	5.0	85.9	2.1	83.9	0.4160	−2.92
750–1,000	10.8	31.1	6.3	12.5	0.5821	−4.53	4.1	89.9	2.4	86.3	0.5788	−1.71
1,000–1,250	9.8	40.9	7.3	19.9	0.7467	−2.49	2.8	92.7	2.1	88.4	0.7438	−0.72
1,250–1,500	7.3	48.1	6.6	26.5	0.9091	−0.66	2.2	94.9	2.0	90.4	0.9144	−0.19
1,500–1,750	5.9	54.2	6.4	32.9	1.0724	0.43	1.4	96.3	1.5	91.9	1.0797	0.11
1,750–2,000	4.8	59.0	5.8	38.7	1.2162	1.04	1.0	97.3	1.3	93.1	1.2475	0.25
2,000–2,250	3.6	62.6	5.1	43.8	1.4083	1.47	0.7	98.0	1.0	94.1	1.4028	0.29
2,250–2,500	2.6	65.2	4.2	48.0	1.5736	1.52	0.5	98.5	0.8	94.9	1.5849	0.31
2,500–3,000	3.3	68.5	6.0	54.0	1.8078	2.69	0.4	98.9	0.7	95.7	1.8049	0.33
3,000–3,500	1.9	70.4	4.0	58.0	1.1270	2.13	0.3	99.2	0.6	96.3	2.1071	0.31
3,500–4,000	1.1	71.5	2.7	60.8	2.4685	1.63	0.2	99.4	0.4	96.7	2.5000	0.24
4,000–5,000	1.0	72.5	3.0	63.8	2.9216	1.96	0.2	99.6	0.5	97.2	2.8750	0.30
5,000–7,500	0.8	73.3	3.2	67.0	3.9146	2.39	0.2	99.8	0.6	97.7	3.8667	0.43
7,500 & over	1.2	74.5	13.6	80.5	11.3000	12.36	0.2	100.0	2.3	100.0	12.3158	2.15
Over-inequality						27.62						4.72
Under-inequality						−21.67						−10.67
Excess (overs minus unders)						+ 5.95						− 5.95

Source: Columns 2 and 4 derived by computation from Tables 3, page 18, and 2, page 6 of "Consumer Incomes in the United States," *op. cit.* Columns 8 and 10 similarly derived from Tables 15, page 18, and 2, page 6. *ibid.*

giving 96 such bumps on the coefficient curve, or approaches to equality in the Lorenz curve. It will be seen that in such a Lorenz curve, *i.e.*, one constructed from a complex (multiple) classification, the curve of the distribution could cross the line of equality if the total of the "over-inequalities" to and including any group exceeded the total of the "under-inequalities" of this and all previous groups. This, of course, can not occur for a simple (single) classification. In Figure 6, in fact, such a "crossing of the line" does occur. But note that the line of equality

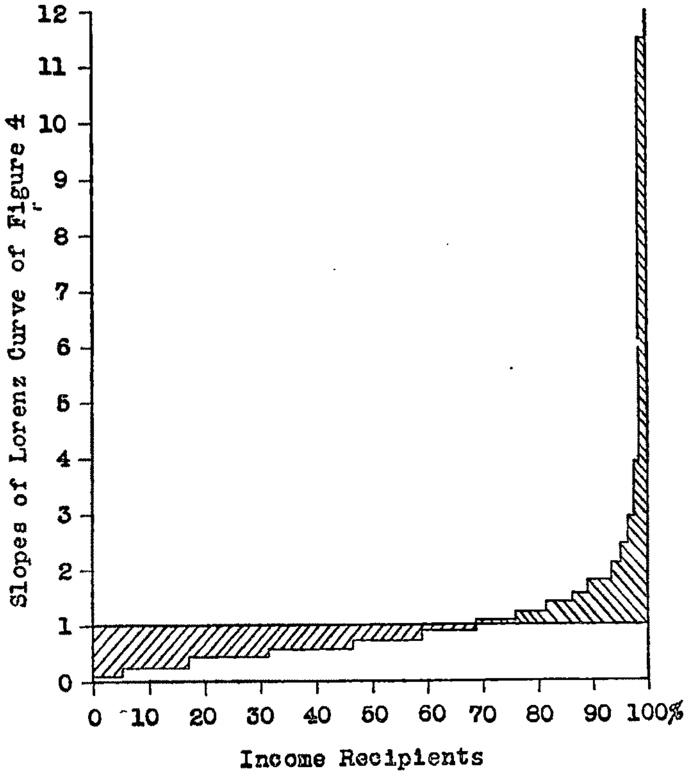

FIGURE 5. EQUALITY AND INEQUALITY CURVES COGNATE TO LORENZ DIAGRAM OF FIGURE 4

Source: Columns 3 and 6 of Table II

would not be crossed in this distribution if the single units had been listed first, since the under-inequality attaching to this group exceeds its over-inequality. The Lorenz representation is thus subject in this situation to wide and purely arbitrary variation, and the situation is one in which the slopes technique is clearly superior.

Occupational and other classifications can be further imposed on the data up until individual segregation is reached, with each income

recipient classified in all ways of interest to the investigator, a process which carried to the extreme would obviously rob it of all interest for the investigator. Perhaps useful comparisons can be derived using 3 or 4 or even 5 systems of classification. Beyond that, complexity is likely to hinder comprehension. Illustration of a double classification is presented in Table III and in Figures 6 and 7.

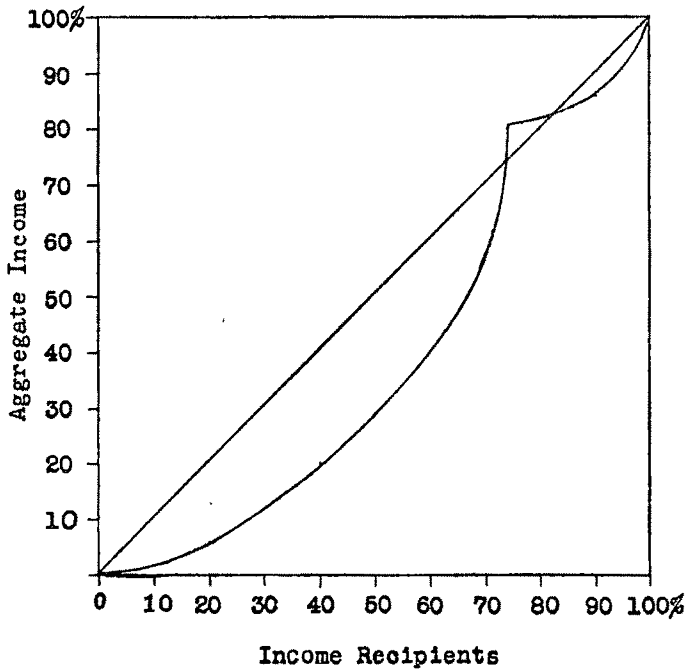

FIGURE 6. LORENZ DIAGRAM OF A DOUBLE CLASSIFICATION
Source: Columns 3, 5, 9 and 11 of Table III

It should be evident that imposing one classification upon another will not affect the total of inequality as represented by the coefficient unless such sub-classification splits a category in the former classification in which inequality was hidden. Such "hidden" inequality occurs in the Statistics of Income of the U. S. Bureau of Internal Revenue in the years since 1941, where a large portion of the income is reported on form 1040A. These recipients, who include much of the "under"-inequality in the distribution, are lumped together in a group which includes incomes of $3,000, and the total group comes out with a small "over"-inequality on balance. This may also happen in one of the large and ill-defined present categories in other distributions which may include 15 per cent or more of the income recipients, some of whom

get less than their "equal" share, and some of whom get more. In these cases the apparent inequality is reduced by the fact that in some category under- and over-inequality average out to comparative equality. If another classification is superimposed, then this reduces the popula-

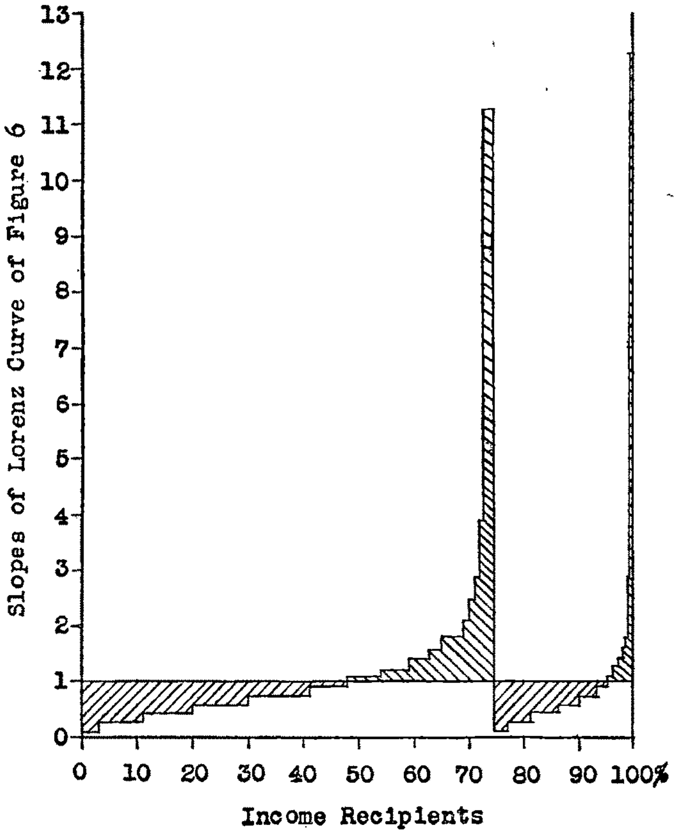

FIGURE 7. EQUALITY AND INEQUALITY CURVES COGNATE TO FIGURE 6, LORENZ DIAGRAM OF DOUBLE CLASSIFICATION

Source: Columns 3, 6, 9 and 12 of Table III

tion of each category and thereby exposes inequality which may have been "averaged in" by the previous coarse grouping.[3]

Now how is the inequality among groups in the income receivers related to the total of inequality? If one classification is imposed upon another, then the total inequality can be gotten as before by adding up the total over's or the total under's. The two sums will always be equal. The inequality among groups can be found by taking the sum

[3] *Cf.* footnote 2, and the suggestion on page 113.

of the differences between over's and under's within each group. Or, it may be arrived at more quickly by subtracting the percentage a group is of the total from the percentage of total income it receives. This is additive for any number of mutually exclusive groups. The sum of the intergroup under's will exactly equal the sum of the intergroup over's, and either may be used as the coefficient of inequality among groups. This can not be greater than the total coefficient, but can be as great in the limiting and highly unlikely case that all of the under's belong to certain of the groups, and all of the over's to the rest. It should be legitimate, then, to speak of a proportionate part (secured by comparing the two coefficients) of the total inequality as being due to the inequality that exists among the groups of the classification. A triple classification—for example, as to sex, occupation and income levels—would show the total inequality, and that part of it attributable to either occupation or sex or to both occupation and sex, which would be the sum of the two. Increase in the number of classifications would make intergroup inequality tend toward total inequality.

What shall we do with the people who suffer net losses? They are obviously more unequally situated with respect to income than even those who receive zero income. Their losses should, it seems, be subtracted from aggregate income to give a figure for the net aggregate of income. But it is a distortion to subtract them in succession from each following group until the end is reached. This is, of course, what the Lorenz distribution does with every group because it is cumulative, and this accounts for the seeming asymmetry in the Lorenz curve of the symmetrically distributed inequality of Table I. Discussion of that phenomenon was postponed to this point because it shows up so clearly in connection with negative incomes or losses. In words, each discrepancy from equality is added to the next one higher up the scale so that the higher points show not only their own differences from the line of equality, but the cumulative difference of all the points below them.

Thus, when over-inequality is encountered, it does not immediately bring the line to the other side of equality in the cumulative curve, but only begins to drag it toward that latter line. And when losses are included at the beginning, the line for the distribution does not cross the *zero* line until positive income has balanced the negative income in the distribution, although long before the zero line is reached, it is obvious that groups have been receiving positive income. Although these facts will be discerned in a careful interpretation of the Lorenz curve itself, the superiority of the individual points approach in the slopes method will, I believe, be apparent. For analogous reasons the superi-

ority of the slopes method should be apparent also when two crossing Lorenz curves are compared. The point dividing those who are relatively better off in the one distribution from those who are relatively better off in the other is not the intersection point of the two Lorenz curves. Only the slopes method makes this point immediately discernible.

Illustration of the propositions with respect to negative income will be found in Tables IV and V and in Figures 8, 9, 10, and 11.

TABLE IV.—A HYPOTHETICAL SIMPLE INCOME DISTRIBUTION ILLUSTRATING SMALL LOSSES

Income Recipients				Income Received				Slope (7÷3)	(Slope−one) X Per Cent (Coefficient)
Number 1	Cumulative 2	Per Cent 3	Cumulative 4	Amount 5	Cumulative 6	Per Cent 7	Cumulative 8	9	10
1	1	10	10	−$ 50	−$ 50	− 5	− 5	−0.5	−15
1	2	10	20	20	− 30	2	− 3	0.2	− 8
1	3	10	30	50	20	5	2	0.5	− 5
1	4	10	40	80	100	8	10	0.8	− 2
1	5	10	50	100	200	10	20	1.0	0
1	6	10	60	100	300	10	30	1.0	0
1	7	10	70	120	420	12	42	1.2	2
1	8	10	80	150	570	15	57	1.5	5
1	9	10	90	180	750	18	75	1.8	8
1	10	10	100	250	1,000	25	100	2.5	15
Coefficient of Inequality									±30

TABLE V.—A HYPOTHETICAL SIMPLE INCOME DISTRIBUTION ILLUSTRATING LARGE LOSSES

Income Recipients				Income Received				Slope (7÷3)	(Slope−one) X Per Cent (Coefficient)
Number 1	Cumulative 2	Per Cent 3	Cumulative 4	Amount 5	Cumulative 6	Per Cent 7	Cumulative 8	9	10
1	1	10	10	−$500	−$ 500	−50	− 50	−5.0	−60
1	2	10	20	− 300	− 800	−30	− 80	−3.0	−40
1	3	10	30	− 300	− 1,100	−30	−110	−3.0	−40
1	4	10	40	− 100	− 1,200	−10	−120	−1.0	−20
1	5	10	50	200	− 1,000	20	−100	2.0	10
1	6	10	60	300	− 700	30	− 70	3.0	20
1	7	10	70	300	− 400	30	− 40	3.0	20
1	8	10	80	400	0	40	0	4.0	30
1	9	10	90	500	500	50	50	5.0	40
1	10	10	100	500	1,000	50	100	5.0	40
Coefficient of Inequality									±160

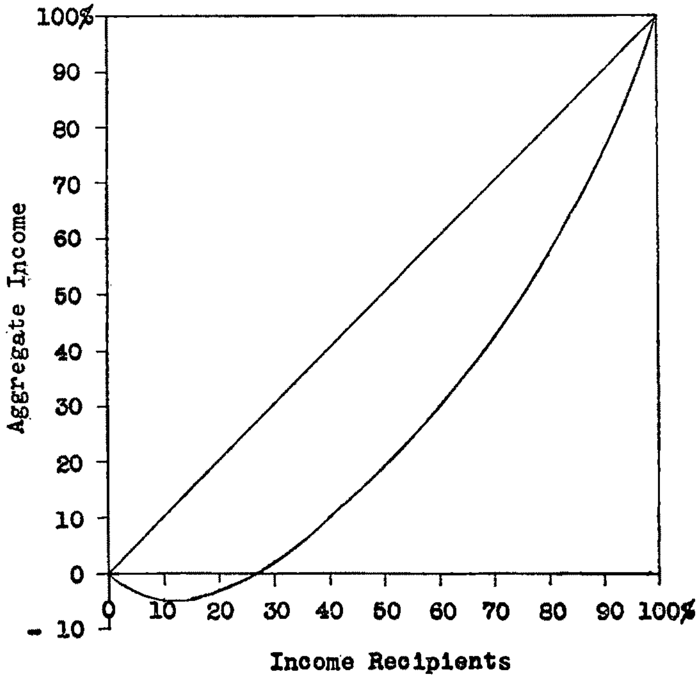

FIGURE 8. LORENZ DIAGRAM OF A HYPOTHETICAL DISTRIBUTION WITH SMALL LOSSES
Source: Columns 4 and 8 of Table IV

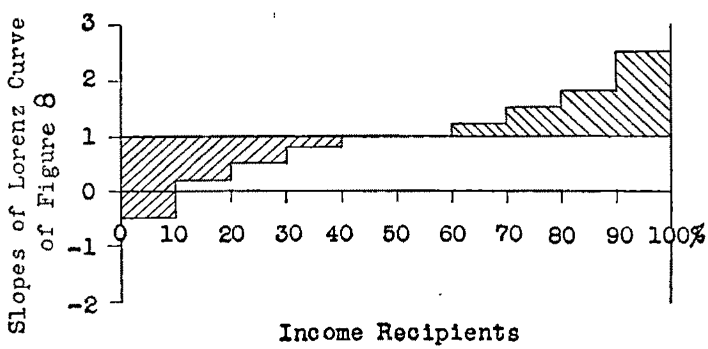

FIGURE 9. EQUALITY AND INEQUALITY CURVES COGNATE TO LORENZ DIAGRAM OF FIGURE 8. A HYPOTHETICAL DISTRIBUTION WITH SMALL LOSSES
Source: Columns 4 and 9 of Table IV

It should be remarked that comparison with the line of equality (slope of Lorenz curve equals one) is not necessarily the standard we may wish to use. It might be possible, for example, to work out a "desirable" income distribution on the basis of age differentials and differences in prices in different communities, and plot this instead of the

line of equality as a standard against which the current distribution might easily be compared by means of the coefficient and the chart of tangents.[4] Until this is done, however, the line of equality remains the

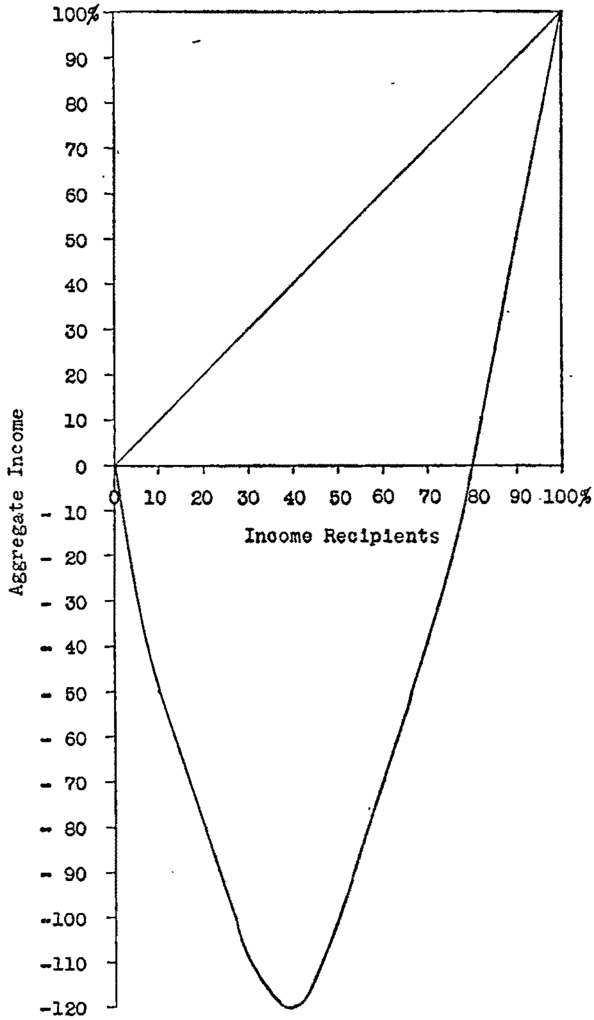

FIGURE 10. LORENZ DIAGRAM OF A HYPOTHETICAL DISTRIBUTION WITH LARGE LOSSES
Source: Columns 4 and 8 of Table V

[4] The formula for computation of the Coefficient, using as a basis for comparison a curve different from the line of equality, is

$$\int_0^{100} [F'(x) - f'(x)]\, dx$$

taken without regard to sign. The functional relationship of such a norm with x would have to be derived and expressed in cumulated form, of course, as is the Lorenz function.

most convenient and the most objective standard for comparison.

Negative income or losses have been treated as nuisance items, and largely ignored in studies of income distribution. However, particularly in certain periods and for certain groups, and always in the study of inequality, they should be included. The above outlined method of handling negative income seems appropriate and consistent with the rest of the method.

In summary, this paper has presented an extension of the Lorenz technique of measuring inequality in income distribution, based on computing the slope of the Lorenz curve at a number of points. It was

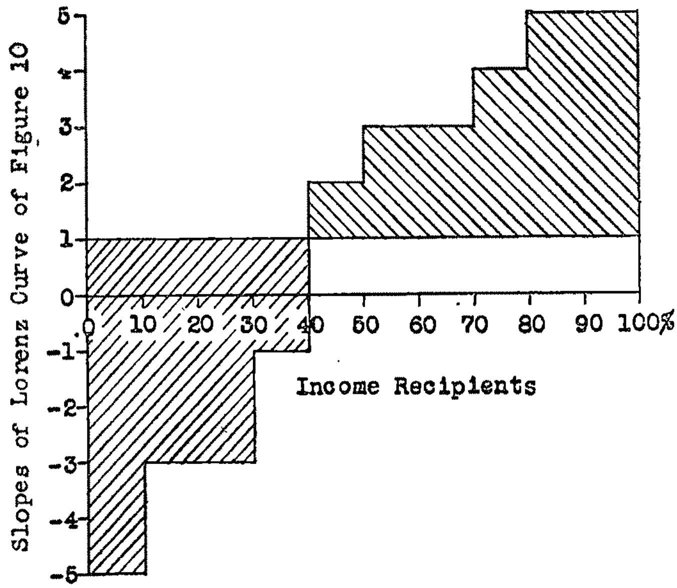

FIGURE 11. EQUALITY AND INEQUALITY CURVES COGNATE TO LORENZ DIAGRAM OF FIGURE 10. A HYPOTHETICAL DISTRIBUTION WITH LARGE LOSSES

Source: Columns 4 and 9 of Table V.

suggested that income data would show inequality better if it were presented ranked and classified by equal, small percentage increments of income receivers, rather than as is now almost universal, by coarse and variable income size classifications. Elaboration of the technique was presented to show how inequality is distributed among various sub-classifications and groups. Finally, a method of showing the effect on inequality of negative incomes was presented. It is hoped that these modest additions to technique may render the concept of income inequality more precise and understandable.

SECONDARY RESERVE REQUIREMENTS FOR COMMERCIAL BANKS

By EDWARD C. SIMMONS*

Reform of the American banking system is a perennial topic in economic discussion. The weaknesses of our fractional-reserve unit-banking system are periodically revealed as changes occur in the financial environment. The most significant change in recent years has been the absorption of a large fraction of a greatly expanded national debt by the commercial banking system. Federal Reserve policy has been dominated by debt management considerations arising from this development. Much thought has been devoted to devising reform measures to create a situation in which central banking powers may again be available for purposes of monetary management. A plan which has received considerable attention is that commercial banks should be required to hold a special reserve of short-term government securities against deposits. It is held that this reform would adapt the existing banking system to the new situation. Late in 1947 the Board of Governors of the Federal Reserve System presented a proposal along these lines. This paper considers the basic usefulness of the central idea of that proposal.[1]

Only a few years before considerations respecting debt management came to dominate monetary policy formation, the monetary control mechanism had been developed to a moderately adequate stage. Open market operations, changes in reserve ratios, and the discount rate were the available weapons for controlling the reserves of member banks. Gold sterilization had been devised to insulate bank reserves from the effects of gold movements. Beginning in 1937, however, the preservation of "orderly conditions" in the government securities market prevented the utilization of central bank powers solely to control the supply of money. Subsequently "orderly conditions" came to mean the main-

* The author is professor of economics at Duke University.

[1] Space does not permit the treatment to be broadened to cover other proposals. Reference should be made, however, to L. H. Seltzer, "The Problem of Our Excessive Banking Reserves," *Jour. Am. Statistical Assoc.*, Vol. XXXV (Mar., 1940), pp. 24-36, where there is outlined a plan under which bank-held government securities would be converted into special non-marketable issues. Development of thinking on the bond-reserve plan is commented on by A. G. Hart, *Money, Debt, and Economic Activity* (New York, Prentice Hall, 1948), p. 449.

tenance of a level and pattern of rates on government securities. Originally a measure of wartime emergency, this doctrine, with slight modification, has persisted in the postwar period.[2]

The practical effect has been that monetary policy has not been available as an economic stabilizer in the postwar period. Those who regard monetary policy as an effective device for reducing economic instability see a need for reforming the monetary and banking apparatus to permit the restoration of central banking to its rightful purpose. Superficially, all that seems to be required is to place commercial banks under effective restraint to prevent their selling government securities in large amounts. After the war the Federal Reserve repeatedly was forced to generate new reserves as it purchased securities in the effort to maintain a predetermined level and pattern of rates.

At the outset there must be an understanding that the measure proposed by the Board of Governors would not restore the prewar situation. If the national debt is to continue in its present form of short- and long-term marketable securities, and if the market is to be kept "orderly" in the sense that the postwar market in government securities has been, there is little room left for monetary policy. With a fixed upper limit for long-term interest rates and with great rigidity in short-run rates at a level below the long-term rates, severe limits are imposed on monetary policy. Fundamentally, there is an irreconcilable conflict between monetary policy and a debt policy of the sort adopted in the United States.

The first requisite of monetary policy is maintenance of stability in the purchasing power of money. It seems unlikely that this essential condition can be fulfilled in the presence of a rigid interest rate structure, particularly when one reflects that monetary policy must operate largely through changes in interest rates. There is an apparent unwillingness to contemplate the financial revolution which is required if both the national debt and the money stock are to be managed appropriately.[3] The achievement of a state of affairs where public debt policy and monetary policy both contribute the maximum to economic stability requires greater changes than are probable. Nothing is gained by re-

[2] Official views are set forth quite fully in *Monetary, Credit and Fiscal Policies, 81st Congress, 1st Session, Joint Committee on the Economic Report* (1949). See especially the text of the statement of the Secretary of the Treasury and the Chairman of the Board of Governors of the Federal Reserve System.

[3] H. C. Simons outlined a possible system of monetary and financial arrangements, under which government debt would exist only in two forms, circulating money and long-term debt. Management would be directed toward price stability. See *Economic Policy for a Free Society* (Chicago, University of Chicago Press, 1948), pp. 220-39. A somewhat similar view is set forth by Milton Friedman, "A Monetary and Fiscal Framework for Economic Stability," *Am. Econ. Rev.*, Vol. XXXVIII, No. 3 (June, 1948), pp. 245-64.

garding the measure under consideration as anything more than a means of simplifying the problem of debt management within the existing financial framework.

The Board of Governors offered its proposal as a temporary measure to meet a particular situation.[4] The idea has possibly more merit than is suggested by its being put forward on this basis. On the other hand, some of the claims made by the Board for the measure are excessive. Much can be said for the general principle that commercial banks should be required to adhere to a definite rule in managing their secondary reserves. The Board was not concerned with the matter of permanent reform of secondary reserve practices but rather with devising a control scheme which would replace existing but ineffective means of regulating bank reserves. This led it to offer a highly complex scheme and to overstate its usefulness. A simpler secondary reserve requirement of a permanent sort would be preferable and would none the less be of considerable assistance in debt management.

The Board's proposal can best be summarized by quoting from its memorandum of December 8, 1947 to the House Banking and Currency Committee.[5] The proposal was outlined as follows:

(1) Banks subject to the provisions would be required, in addition to their regular reserves, to hold a special reserve consisting of:
  (a) Obligations of the United States in the form of Treasury bills, certificates and notes (with original maturities of 2 years or less); or
  (b) Cash items, as defined in the next paragraph, to the extent that their total exceeds 20 per cent of gross demand deposits plus 6 per cent of time deposits.

(2) For this purpose cash items would include the following:
  (a) Balances with Reserve Banks, including statutory required reserves.
  (b) Coin and currency.
  (c) Cash items in process of collection.
  (d) Balances due from in excess of balances due to banks in the United States.

[4] *Cf.* E. A. Goldenweiser, *Monetary Management* (New York, McGraw-Hill, 1949), pp. 90-91. Goldenweiser suggests that the proposal was designed to develop a demand for short-term securities, but the Board's presentation of its case was not limited to this aspect.

[5] "Proposal for a Special Reserve Requirement Against the Demand and Time Deposits of Banks," *Federal Reserve Bull.*, Vol. XXXIV, No. 1 (Jan., 1948), pp. 14-23. A less detailed version was presented to the Joint Committee on the Economic Report, on November 25, 1947. *Ibid.*, Vol. XXXIII, No. 12 (Dec., 1947), pp. 1461-62. It was this statement which formed the basis for immediate discussion. The Board had the idea under consideration from early in the war period and publicly referred to it in its *1945 Annual Report* (p. 8). See G. L. Bach, *Federal Reserve Policy Making* (New York, A. A. Knopf, 1950), pp. 77-78.

(3) The special reserve requirement would apply to both demand and time deposits and would be subject to a maximum limit fixed by statute. A maximum of 25 per cent of gross demand deposits and a maximum of 10 per cent of time deposits will probably be adequate for the temporary period covered by the proposed statute.

(4) The requirement would apply to all banks receiving demand deposits, including member banks of the Federal Reserve System and non-member banks—insured and noninsured. It would not apply, however, to banks that do exclusively a savings business.

(5) The power to impose and to vary the special reserve requirement would be vested in the Federal Open Market Committee and would be limited by law to a temporary period of three years.

(6) The requirement would be introduced gradually as credit conditions warrant. The authorizing statute could provide that, after a special reserve has been established of 10 per cent against gross demand deposits and 4 per cent against time deposits, further changes would not exceed 5 per cent of gross demand deposits and 2 per cent of time deposits at one time. Ample notice should be given before the effective date of the initial application of the requirement, or of subsequent changes, to allow banks adequate time to make adjustments.

(7) The following considerations should determine the timing of the introduction of, or changes in, the special reserve requirement:
   (a) The volume and ownership of special reserve assets and of other assets readily convertible into eligible assets;
   (b) Past and prospective gold movements, currency fluctuations, or other factors causing changes in the volume of bank reserves;
   (c) Conditions in the Government securities market;
   (d) The general credit situation.

(8) Special reserves and requirements would be computed on a daily average basis for monthly periods, or for other periods by classes of banks as the Open Market Committee might prescribe. The penalty against average deficiencies in the requirement would be one-half per cent per month, payable to the United States.

(9) The Federal Open Market Committee would be authorized to issue regulations governing the administration of the requirement, to require necessary reports, and to delegate administration with respect to non-member banks to other appropriate Federal or State banking agencies.[6]

Some of these features are of no importance in the present discussion, such as locating the power to vary the requirement in the open market committee, limitation of changes to prescribed steps, authorization for differential changes, and the considerations which should govern the

[6] *Federal Reserve Bulletin*, Vol. XXXIV, No. 1 (Jan., 1948), pp. 16-17.

introduction of the plan and actions under it. The averaging principle is obviously necessary. It should be noted that the monthly period suggested exceeds the weekly and semi-monthly intervals utilized for primary reserve computations. The penalty suggested for deficiencies does not correspond with the rate for primary reserve deficiencies.[7]

Extending the plan to cover non-member banks requires brief comment. Although the effectiveness of the plan would be weakened if this were not done, it raises the question of jurisdictional conflicts among bank supervisory agencies at the federal and state levels of government. In addition, since primary reserve requirements of non-member banks are not encompassed, and since these vary widely among the states, enforcement of the measure in the non-member bank area would present administrative difficulties. A full-scale approach to the problem of non-membership in Federal Reserve System would be preferable to extension of a temporary highly complex control measure to non-member banks. The dualism of the banking system is a matter which must be passed over in the interests of brevity if other issues are to receive deserved attention.

Strong opposition was immediately stated to the Board's proposal by spokesmen for the Treasury, the New York Federal Reserve Bank and the commercial banks.[8] The Board apparently had not attempted to obtain Presidential endorsement for its proposal, and there is evidence that it would have been unsuccessful had it done so.[9] Except for the immediate discussion of the plan before Congressional Committees, the measure aroused little interest. No legislative action was initiated.

[7] The length of the averaging period and the penalty for deficiencies cannot be examined at length, but these features should probably be made uniform with the primary reserve requirements system in the interests of administrative simplicity.

[8] In the Board's prepared statement to the Joint Committee reference is made to banker opposition and the testimony of witnesses before the Congressional Committee indicates a familiarity with the plan deriving from private discussions. The Secretary of the Treasury expressed himself only in guarded words before the House Committee on Banking and Currency, but there is other scattered evidence that the Treasury strongly disapproved the plan. See *Hearings, Economic Stabilization Aids, Committee on Banking and Currency, House of Representatives, 80th Cong., 1st sess*, p. 225. See also *Monthly Letter, National City Bank*, December, 1947, pp. 137-38, where it is alleged that the Secretary of the Treasury condemned the plan before the House Committee. The testimony of the President of the New York Federal Reserve Bank is in *Hearings on S. J. Res. 157*, pp. 232-35. This is significant for it represents public disagreement between the Board of Governors and the Reserve banks. Mr. Edward Fleming and Mr. Edward Brown, both members of the Federal Advisory Council stated the commercial bankers' views before the Senate Committee, raising the charge of "socialization." None of the witnesses had anything good to say for the Board's proposal, which was associated with the personal views of the then chairman of the Board of Governors. In part the attack on the plan was directed at his general philosophy of banking regulation.

[9] G. L. Bach, *op. cit.*, p. 161. This writer indicates that it has been a matter of principle with the Board to insist on its prerogative to approach the Congress directly.

The Board of Governors did not continue to press for action on its proposal.[10]

After sketching the reasons for its inability to control the postwar expansion of bank reserves because of the necessity of supporting the government securities market, and noting that increased levels of short-term money rates would probably be ineffective in preventing banks from selling government securities, the Board urged its proposal as a highly effective monetary control device. It was said that its effect would be to lower the multiple expansion possibilities of the banking system, to open the way to raising interest rates on private credit without increasing rates on government securities, and to supplant the need for further increases in primary reserve ratios.

On these matters the Board seems to have overstated the case. The multiple by which deposits may be expanded would not be reduced unless the special reserve requirement were fixed at so high a level that banks could not obtain assets other than legal primary reserves to satisfy the special requirement.[11] With the cash assets option in the plan, no such result could be obtained. A member bank faced with inability to purchase short-term government securities would not need to hold balances at its Federal Reserve bank to satisfy the requirement. It could always sell its federal funds for a balance with a correspondent bank, thus releasing legal reserves to other banks in the system.[12] Non-member banks would be similarly affected, but since their primary reserves typically consist of cash in vault and balances with commercial banks, they would be placed under more restraint than member banks. For non-member banks, the special reserve requirement might, in the absence of a sufficiency of short-term government securities, operate as an increase in primary reserve requirements. In no event would the expansion multiple be reduced unless short-term government securities were unavailable in sufficient amounts to satisfy the requirement.

As to the view that the way would be opened to raising interest rates in the private sector of the economy while leaving interest rates on government securities unaffected, it need only be said that such an

[10] It reiterated its faith in the idea in its *1947 Annual Report* (pp. 9-10), dated April 9, 1948. On April 15, 1948 Thomas B. McCabe succeeded Marriner S. Eccles as chairman, the latter's term as chairman having expired prior to his successor's appointment to the Board of Governors. Federal Reserve policy shifted to emphasizing the need for power to increase primary reserve requirements. In replying to a questionnaire from the Joint Committee on the Economic Report, chairman McCabe did not urge enactment of the special reserve requirement. See *Monetary, Credit, and Fiscal Policies* (1949), pp. 37-38.

[11] *Cf.* E. A. Goldenweiser, *op. cit.*, p. 91.

[12] Such a transfer may be illegal under the restrictions on the payment of interest on interbank balances contained in section 19 of the Federal Reserve Act, but in view of the lack of clarity in the interpretation of what constitutes interest, no barrier seems to exist to transfers of the type suggested.

event could come about only if the supply of short-term government securities were so limited that banks would have to satisfy the special requirement by holding large amounts of cash assets. Under these circumstances, banks would presumably bid furiously for the limited supply of government securities, much as banks did in the national banking era for circulation bonds, while at the same time being unable to grant loans or acquire other earning assets.

To bring about such a situation the floating debt would have to be greatly contracted. It is not beyond the realm of possibility that the special reserve measure could be employed to bring about differential movements of rates on short-term government and private paper, but this result could be achieved only by drastic alterations in the supply of short-term government securities and bank reserves. Such a situation would probably not be created under a temporary measure by a government commission which has consistently exhibited a commendable hesitancy to embark on radical experiments.

The third claim that further increases in legal reserve ratios would be obviated is nothing more than the first claim in other words. It raises the interesting question of the probable effects of the concomitant use of the variable primary reserve ratio and the variable secondary reserve ratio if the central bank were provided with both weapons.

During the postwar period member bank reserves tended to increase because of a gold inflow, a reduction of money in circulation and purchase of government securities by the Federal Reserve banks. Normally, reduction in the portfolio of the central bank would be available to counteract the first two factors, but the Board was powerless to employ this means and was in fact obliged by its support policy to add to reserves by purchasing government securities.[13]

The variable reserve ratio is considered to be an alternative to open market operations, particularly under circumstances where large changes in excess reserves are called for.[14] In the postwar period the variable reserve ratio could not be used or used effectively. Until August, 1948 when an emergency grant of power was made to the Federal Reserve to make further increases in reserve requirements

[13] Frequent reference is made in Federal Reserve and Treasury statements to the retirement of government debt as a counterinflationary measure. While it is true that debt was retired, bank reserves do not reflect this significantly because Federal Reserve purchases in the open market generated reserves approximately at the same rate as retirement of securities held by Federal Reserve banks from Treasury surpluses destroyed reserves.

[14] It is the generally accepted view that these two monetary weapons are complementary rather than alternative. Open market operations are suitable for frequent use to produce small changes in reserve positions, the variable reserve ratio for occasional use to produce large changes.

until June 30, 1949, nothing could be done.[15] Furthermore, increases when ordered induced open market purchases by the Federal Reserve banks, because commercial banks sold government securities to adjust their reserve positions.[16] This anticipated effect was used by the Board of Governors as an argument for the special reserve requirement. Its view that new reserves would be immobilized is not correct.

On other grounds, however, it may be argued that the variable primary reserve ratio should be held in abeyance if the variable secondary reserve ratio is used. Limited experience with increases in primary reserve ratios indicates that a severe shock is administered by such changes. Presumably increases in secondary reserve requirements would have equally widespread effects. If both requirements were raised simultaneously or with only a brief interval between changes in one and the other, the operating level of the banking system would be confronted with a situation that might degenerate into chaos.

Even if, as has been the practice, reserve ratios are increased only after detailed surveys have been made to make certain that large numbers of banks will not be forced into reserve deficiencies, a substantial number of banks react by trying to gain reserves. Some banks are actually deficient and others desire to continue to hold excess reserves. Their normal method is to dispose of secondary reserves. If they were to be placed in a position where this means of reserve adjustment were impossible or highly restricted, the results might be to induce wholesale liquidation of earning assets. Whether both control devices could be used with sufficient skill to prevent such a result is problematical.

If a secondary reserve requirement without a variable feature were adopted, the effect would be to restrict somewhat the use of upward changes in primary reserve ratios as a control measure. Before ordering an increase in primary requirements, consideration would have to be given to the adequacy of banks' secondary reserves in addition to other factors.

Downward changes in requirements would present less difficult problems. Even in that case, the effect would be to present commercial banks with a suddenly changed situation. A decrease in primary reserve requirements has the result of creating a wholly new situation at the operating level of the banking system, and if the special reserve requirement were to be decreased simultaneously, the change would be further

[15] Except that the requirement against demand deposits of central reserve city banks could be increased from 20 to 26 per cent. This requirement was raised to 24 per cent in the first six months of 1948.

[16] For an analysis of the reaction to the change see *Monthly Review, Federal Reserve Bank of New York,* Vol. XXX, No. 10 (Oct., 1948), pp. 101-2.

magnified. Monetary control devices which do not have the effect of producing sudden changes in the data within which business enterprises must formulate managerial policy are to be preferred over those which do.

Since the variable reserve ratio was first used in 1936, there have been twenty-one further changes in legal reserve ratios, although only limited numbers of banks have been affected by some changes. As the impact of the legal reserve requirement on the individual bank is to control the proportion of its assets that it must hold in non-earning form, bankers sometimes interpret changes in reserve ratios as bureaucratic devices to control bank earnings. If they were confronted with a situation in which they would be subject to changes not only in the proportion of their assets which must be held in non-earning form but also with changes in the proportion of their earning assets which must be held in a specific form, they would possibly regard themselves as being unduly burdened.

The imposition of primary legal reserve requirements on banks needs no justification. Although the fundamental purpose of legal reserve requirements is to provide a means of controlling the economy's money supply, bankers concede that primary reserves are necessary in day-to-day operations.[17] Reserve requirements have been made variable to perfect the monetary control mechanism, and the principal over-all effect of this weapon has been to insulate the economic system from the impact of the gold inflow.[18] An incidental effect has been to reduce the multiple expansion possibilities of the banking system, and thus to reduce somewhat instability in the money supply. So long as the authorities utilize the variable reserve ratio only infrequently, bankers appear willing to comply with reserve requirements and to preserve the degree of voluntary cooperation required to make control of the money supply possible.[19] If a variable special reserve requirement were added to the existing arrangements, obtaining compliance might prove troublesome.

Imposition of some system of secondary reserve requirements is justifiable. In their own interests bankers should follow definite rules as

[17] *Cf.* J. M. Keynes, *A Treatise on Money* (New York, Harcourt, Brace, 1930), Vol. II, pp. 68-73.

[18] Alternatively, however, measures could have been taken to prevent the gold inflow or to absorb it by sterilization. Insulation was by no means complete. Bank reserves have expanded by more than reserve requirements have been increased.

[19] No elaborate policing is utilized to keep banks in line. Voluntary reports are made of reserve positions, and examiners check on the matter in the course of their periodical visits to banks. This is an interesting example of the effectiveness of non-punitive governmental regulation of business. The mechanism would scarcely be workable if each of thousands of banks had to be supervised closely.

to secondary reserves. In so doing they would indirectly assist the Treasury in its task of managing the national debt. If the device is to be used, bankers must accept secondary reserve requirements as they have primary reserve requirements, that is, as necessary from an operating point of view. Possibly if the Board of Governors had presented the idea of a secondary reserve requirement in a less complex form and without representing it as a panacea, a more favorable response might have been obtained. One cannot avoid concluding that a basically valid idea has been done substantial harm by the Board's handling of this matter. For some time to come anyone who proposes that banks be required to conform to statutory rules on secondary reserves will find a hostile reception for his views. Despite that consideration, a useful purpose is served by outlining a less ambitious substitute for the Board of Governors' proposal.

A secondary reserve requirement should have been incorporated in banking legislation along with primary reserve requirements. Many bank failures would probably have been prevented had banks been obliged by law to conform to such a rule.[20] Sufficient reason for the failure to incorporate this provision in law can readily be adduced. Banking theory was long dominated by the real bills doctrine, although banking practice has never conformed to it. Much of banking law represents attempts to apply this doctrine. In it there is no place for secondary reserves because bank liquidity is assured by the bank's making only short-term self-liquidating loans.[21] The concept of secondary reserves emerges only when one recognizes that the real bills doctrine is without foundation in theory or in fact and that as an operating reality banks can operate satisfactorily only if a substantial portion of their assets consists of short-term open-market paper. This recognition now extends widely among bankers although many as yet do not apply their knowledge very effectively.[22]

[20] R. G. Rodkey attributes bank failures in part to inadequate secondary reserves. See "State Bank Failures in Michigan," *Michigan Business Studies,* Vol. VII, No. 2 (1935), pp. 17-19.

[21] *Cf.* L. W. Mints, *A History of Banking Theory* (Chicago, University of Chicago Press, 1945) especially pp. 215-22. Logically, adherence to the real bills doctrine permits no recognition of secondary reserves. Bank assets consist wholly of short-term self-liquidating paper, some of which is continuously maturing. In a sense this maturing paper is the bank's secondary reserve. As the term is generally used, secondary reserve assets consist of open-market short-term paper.

[22] Statistics of bank assets do not permit determining the extent to which banks adhere to the principle of maintaining as a matter of firm policy a definite proportion of their earning assets in liquid paper. Metropolitan banks are known to be more careful than country banks. The entire matter has been confused by the policy of supporting the prices of government securities, as the effect of this policy is to provide commercial banks with long-term riskless assets. This policy operates to destroy the boundary between secondary reserve assets and earning assets generally. Facilities for borrowing upon

Another factor which explains the failure to find legal recognition of secondary reserves is the slow development of the money market. It is only since the huge expansion of the government debt that there has been available a large floating supply of short-term paper which can serve as secondary reserves. Prior to this development banks were obliged to rely for liquidity on a limited amount of bankers' acceptances, open market commercial paper, brokers' loans and long-term bonds or to depend on borrowing from Federal Reserve banks or correspondents. The banking system has operated only tolerably well, in part because secondary reserve practices developed slowly and only among the more alert of bank managements. There was actually no opportunity until recently to consider the possibility of making secondary reserves compulsory. Bankers now have become familiar with government securities and the mechanics of trading in them. An adequate supply of short-term paper can easily be provided by shaping debt management policy to meet the needs of banks for secondary reserve assets.

In recent years treatises on bank management have placed emphasis on good secondary reserve practices.[23] As yet there has not been a crystallization of thinking on the matter. Bank statements, for example, do not customarily indicate the amount of secondary reserves held, these assets being hidden in loans and investments. Bank examination standards do not embody definite rules on this matter for the guidance of examiners and bank managements. Possibly banks will in time adopt adequate secondary reserve practices voluntarily, but there is excellent precedent for accelerating this development by legislative means.

The argument that the reform is needed in the interests of sound banking may be briefly set forth. Banks which hold adequate secondary reserves are able to adjust their primary reserves quickly and easily. No bank needs to be so liquid that it can pay off its depositors on a moment's notice, but it must be prepared at all times to restore its primary reserves when a drain is imposed upon it by a shift in deposits to other banks or by cash withdrawals.[24] Under the fractional reserve

customers' paper has a similar effect, and leads to the view that a bank's eligible paper is to be regarded as part of its secondary reserves. Under institutional arrangements of this sort it is not surprising that secondary reserve practices have not solidified.

[23] Representative examples are R. G. Rodkey, *Sound Policies for Bank Management* (New York, Ronald, 1944), pp. 19-33 and P. M. Atkins, *Bank Bond Investment and Secondary Reserve Management* (Boston, Bankers Publishing Co., 1940), pp. 254-72. Money and banking textbooks customarily devote a chapter to secondary reserves and the money market. Only works such as Rodkey or Atkins carry the matter to the point of formulating operating rules.

[24] If banks as a practical matter had to be in a position to liquidate instantaneously, fractional reserve banking would not be possible. Recognition that a large fraction of

principle of banking, decreases in deposits release only part of the primary reserves needed to meet such drains. Consequently, liquidation of earning assets is induced, unless the drain is promptly reversed.[25] Local loans cannot conveniently serve as the vehicle of adjustment because customer relationships may be damaged if the bank refuses accommodation. Long-term securities may not be relied upon because their sale on short notice may involve capital losses.

By making a practice of holding a substantial portion of its assets in the form of open market paper, a bank is well prepared to adjust its reserve position. Such assets may be disposed of promptly without appreciable loss and without damaging customer relationships. In the event of an outflow of deposits, primary reserves initially bear the burden, then the bank disposes of secondary reserve assets to restore its primary reserves, and later contracts its less liquid earning assets. When deposits increase, the excess primary reserves produced by their growth may be placed first in secondary reserve assets, and subsequently part of these may be converted into higher yield assets. From an operating point of view secondary reserves provide a convenient means of balancing day-to-day changes in primary reserves.[26] Wholly aside from the effect of a secondary reserve requirement as a means of stabilizing the ownership pattern of the floating debt, this reform is desirable in the interests of providing for efficient functioning of the banking system.

A further argument is that a secondary reserve requirement would reduce the riskiness of banking through directing bank assets into low risk paper. Under existing arrangements bank management is permitted to govern the composition of bank assets within wide limits. Aside from holding legal reserves in proportion to deposits and from

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bank assets is not (and need not be) convertible into cash at once is found in the standards employed in bank examination procedure for valuation of bank assets. Current market value is largely ignored in the official standard. See *Federal Reserve Bulletin*, Vol. XXXV, No. 7 (July, 1949), pp. 776-77.

[25] For short periods of time, such liquidation may be obviated by the fact that member-bank reserve requirements are averages over weekly or semi-monthly periods. Borrowing new reserves at the central bank may also obviate liquidation of earning assets, but as member banks typically borrow on collateral notes, they require secondary reserve assets to facilitate borrowing operations.

[26] An incidental consideration is that borrowing at the central bank for normal reserve adjusting operations might be made unnecessary. Some banks already have adopted the practice of not borrowing for this purpose. See *Monthly Review, Federal Reserve Bank of New York*, Vol. XXXII, No. 3 (Mar., 1950), p. 28. If banks generally could be led to adopt the view that borrowing at the central bank should be resorted to only in emergencies, a step toward more effective central banking would have been made. Only if the central bank is in the position where it can control the generation of bank reserves, is effective monetary control possible. Restriction of borrowing to emergencies would leave the central bank free under normal conditions to act upon its own initiative through open market operations.

being prohibited by statutory stipulations from making certain types of loans or purchasing certain types of securities, bank management is given a free hand.[27] Bank examination is not based on carefully formulated principles, but tends to reflect the views of practical bankers.[28] Banking theory no longer provides a simple answer to the question as to what assets banks should hold.

The real bills doctrine, or the commercial loan theory of banking, as it is sometimes called, has fallen into discard as a practical guide to bank management. No consistent principle is reflected in banks' actual practices.[29] The small number of bank failures in recent years demonstrates that commercial banks can operate safely and profitably with their earning assets composed of types of paper which traditional banking theory does not recognize. There is badly needed a substitute for the old theory.

The now discarded theory embodied one valid point. Its emphasis on short-term lending minimized risk simply because human judgment is less imperfect for short periods of time than for long periods.[30] The adoption of a secondary reserve requirement would operate in the same direction as the old theory in that it would lead banks to hold low risk assets. A large portion of bank assets would not be affected, but a substantial gain would result from requiring banks to confine a large portion of their resources to low risk categories. Past experience with wholesale bank failures justifies obliging bank management to limit the choice of assets by means of a secondary reserve requirement.

Adoption of a secondary reserve requirement would provide an easily administered standard for bank supervision. Relatively slight modification of existing condition report forms would be required. Bank examiners would be able to determine whether or not requirements were being met, with little additional work. The rule would be readily understood both by bank managements and supervisory personnel.

[27] In recent years the composition of bank assets has undergone a marked transformation under the impact of changes in financial practices. Aside from investments in government securities, banks have expanded their real estate loans, consumer loans, and term loans to business. In the immediate postwar period they increased their loans while reducing their investments in government securities. Existing statutory controls do not operate to limit new types of bank assets to low risk paper. The large expansion of real estate loans in the postwar boom is a case in point.

[28] *Cf.* G. L. Bach, *op. cit.*, pp. 91-95, 104-10.

[29] *Cf.* R. S. Sayers, *Modern Banking*, rev. ed. (Oxford, Oxford University Press, 1947) pp. 212-33. Empiricism is the only principle, if it may be called a principle. Bankers hold those assets which experience has shown to be feasible. From time to time, new assets such as consumer loans, are added to the list.

[30] *Cf.* R. S. Sayers, *op. cit.*, p. 223. Two distinct risks are minimized. One is the risk that the borrower may not be successful. The other is the risk that interest rates may rise and cause capital losses. The latter applies especially to bank investments.

The effect of war finance was to provide banks with large amounts of secondary reserve assets. Even long-term government securities came to be virtually riskless under the support policy of the Treasury and Federal Reserve. The expansion of secondary reserves was incidental rather than intentional, but the opportunity has nonetheless arisen to undertake a fundamental reform. During the war-financing program attention was given to providing short- and medium-term government securities for bank purchase. There has been only limited success in keeping banks from absorbing long-term issues subject to depreciation in the event of a rise in interest rates.[31]

If a secondary reserve requirement had been in effect during the war, the means would have been at hand to restrain this tendency effectively. Probably it would have been necessary to increase the ratio of secondary reserves to deposits to adjust the situation to the needs of war finance, but there is no barrier to adjustment of such a bench mark in a wartime emergency. British banks voluntarily raised their conventional liquidity ratio under these circumstances. Such a change does not lead to the conclusion that the secondary reserve requirement should be made variable by administrative action as suggested by the Board of Governors.

If there is a well-established practice of maintaining a secondary reserve ratio, a useful stabilizer is at hand once the war finance emergency is over. Commercial banks then may be expected to hesitate to replace short-term government securities with long-term securities or with loans. No such constraint was felt by many banks in the United States. They were free to dispose of their low-yield wartime-acquired assets for higher yield assets. Had bank managements long been accustomed to adhering to a secondary reserve ratio, the problem of managing the debt in the postwar period would have been less troublesome. One can only regret that bank reform measures in prewar days did not embody a secondary reserve requirement or that prompt steps were not taken to introduce this reform at the close of the war.

No reason exists for not moving to adopt such a measure without further delay. The level at which the required ratio should be set presents a problem of some difficulty. The British banks prior to the war operated with a combined primary and secondary reserve ratio of approximately 30 per cent, but during the war the figure approximated 50 per cent.[32] British experience provides no guide as to the exact figure that should be set, but the prewar relationship under which the

[31] *Cf.* H. C. Murphy, *The National Debt in War and Transition* (New York, A. A. Knopf, 1950) pp. 92-118. This author summarizes the measures employed to restrain bank preference for long-term securities.

[32] See R. S. Sayers, *op. cit.*, pp. 34-35.

secondary reserve ratio was roughly twice the primary reserve ratio might well be used as a rough guide in framing the plan. A workable figure at which to initiate the secondary reserve requirement would have to be established by extended study of the position of banks. The exact level is not significant except as a matter of transition, provided of course, that the figure is set high enough to be meaningful. Once the system were in operation, debt policy could be formulated to provide an adequate but not excessive supply of short-term paper. Obviously the goal would be to keep the supply somewhat in excess of banks' requirements.

Discussions of secondary reserves in books on bank management suggest that each individual bank should establish the amount of its secondary reserves in reference to its own situation. Such matters as the proportion of its demand deposits to time deposits, the seasonal fluctuation in its deposits, its capital to deposit ratio and other individual considerations are given as the determining factors. If all banks are to be brought under a uniform rule as is suggested here, some banks unquestionably will be obliged to carry more secondary reserves than would be called for if each bank made a rational appraisal of its own position. Some banks will need to carry more secondary reserves than the required amount.

This entails some inequity of treatment, but no more discrimination is involved in this instance than in other phases of regulatory action. The principle is well established that the price that must be paid for the luxury of having a unit banking system is the impossibility of tailoring regulatory requirements to fit individual banks. To the extent that individual banks are prevented from realizing as large profits as they might in the absence of regulation, there is a cost element involved. This is unavoidable. An offsetting factor of some significance is represented by the decline since prewar years in the capital to deposits ratio. This weakening of banks' strength justifies a measure that enforces a minimum standard of liquidity even at the cost of a reduction in the rate of profit.

It is to be hoped that the central idea of a secondary reserve requirement which was implicit in the Board of Governors' proposal will receive further consideration. Although the immediate pressures which led the Board to bring forth its proposal have moderated, the fundamental problem remains. Commercial banks must retain indefinitely a large portion of the national debt. Properly the securities held by them should be floating-debt types. A secondary reserve requirement is the simplest way of accomplishing this. The experience of the British banks over many years in operating under such a rule, if a self-imposed one, demonstrates that it is feasible from an operating point of view.

Its contribution to the soundness of the banking system is convincing aside from the effects on debt management.

Were the secondary reserve requirement to be presented as a permanent reform measure without the complexities of the Board's proposal, commercial bankers should properly not oppose the idea. Stripped of the variability feature, the cash assets option, and other features intended to make it a substitute for the traditional monetary control weapons, the plan has much in its favor.[33] The measure will not solve the dilemma of monetary policy versus debt policy, but it will provide a useful stabilizer for one disequilibrating force.

[33] Consideration should be given to authorizing the use of open-market commercial paper, bankers' acceptances, and brokers' loans in addition to short-term government securities. Their use is customary, and their admission would not destroy the stabilizing effect of the requirement on bank ownership of government securities.

THE DISTORTING EFFECTS OF DIRECT TAXATION: A RE-EVALUATION

By ELI SCHWARTZ and DONALD A. MOORE*

I.—*The Advantages of Direct Taxation*

The popularization of the indifference curve technique in economic analysis has led to the critical examination of a great many of the neoclassical conclusions. One such examination has been conducted in the field of taxation in an effort to trace the welfare effects of indirect versus direct taxation.[1] The basic neoclassical conclusion quite briefly was this: that the direct tax was less detrimental because it simply caused a loss of utility due to the reduction in disposable income at the margin, whereas the indirect tax not only did this but also distorted the choice between commodities since relative prices were no longer the same. Through the indifference curve technique it could not only be demonstrated that the distortion effect of indirect taxation existed, but that the loss in welfare might exceed the tax collections of the government.[2] It was, however, soon discovered that if a utility surface was constructed for income (*i.e.*, work) and leisure—upon which the income earner could find his best position at a going wage rate—a distortion effect could be demonstrated for the direct tax, since the direct tax changed the relative prices of work and leisure.[3]

This development would seem to leave one at a loss to choose between the direct tax and the indirect tax on an objective welfare basis, except that it was pointed out that the indirect tax was also income distorting. Although the money price of leisure is left unchanged by an indirect tax, the excise tax by raising prices reduces the real value of a given money income. That is, if collection through an indirect tax is equal to that collected through a direct tax, real income is reduced by a like amount, and thus under an indirect tax the relative *real values* of leisure and work must change.[4] The conclusion is that as long as it is assumed that an individual does not operate completely under a money illusion, an indirect tax brings about two distortions, the direct

* The authors are instructors in economics at Brown University and Michigan State College, respectively.

[1] See M. W. F. Joseph, "The Excess Burden of Indirect Taxation," *Rev. Econ. Studies*, Vol. VI, No. 3 (June, 1939), pp. 226-31; Haskell P. Wald, "The Classical Indictment of Indirect Taxation," *Quart. Jour. Econ.*, Vol. LIX, No. 4 (Aug., 1945), pp. 577-96; A. Henderson, "The Case for Indirect Taxation," *Econ. Jour.*, Vol. LVIII, No. 232 (Dec., 1948), pp. 538-53; Richard Goode, "The Income Tax and the Supply of Labor," *Jour. Pol. Econ.*, Vol. LVII, No. 5 (Oct., 1949), pp. 428-37.

[2] M. W. F. Joseph, *op. cit.*

[3] Haskell P. Wald, *op. cit.*

[4] A. Henderson, *op. cit.*

tax but one. While it is true that the direct tax distorts the choice between income and leisure, the indirect tax not only distorts this choice but also the choice between goods.

II.—*Professor Boulding's Discussion: The Ranking of Direct Taxes on a Welfare Basis*

Granting, then, the factors which indicate the welfare superiority of direct taxation over indirect taxation, we shall confine ourselves in this paper to a discussion of the comparative effects of various types of direct taxation. That is, we are interested in evaluating the welfare results of the progressive, the proportional, the regressive, and the fixed or poll tax. We take as our point of departure the model of Professor Kenneth E. Boulding in *Economic Analysis*.[5] Professor Boulding's diagram is reproduced in Figure 1.

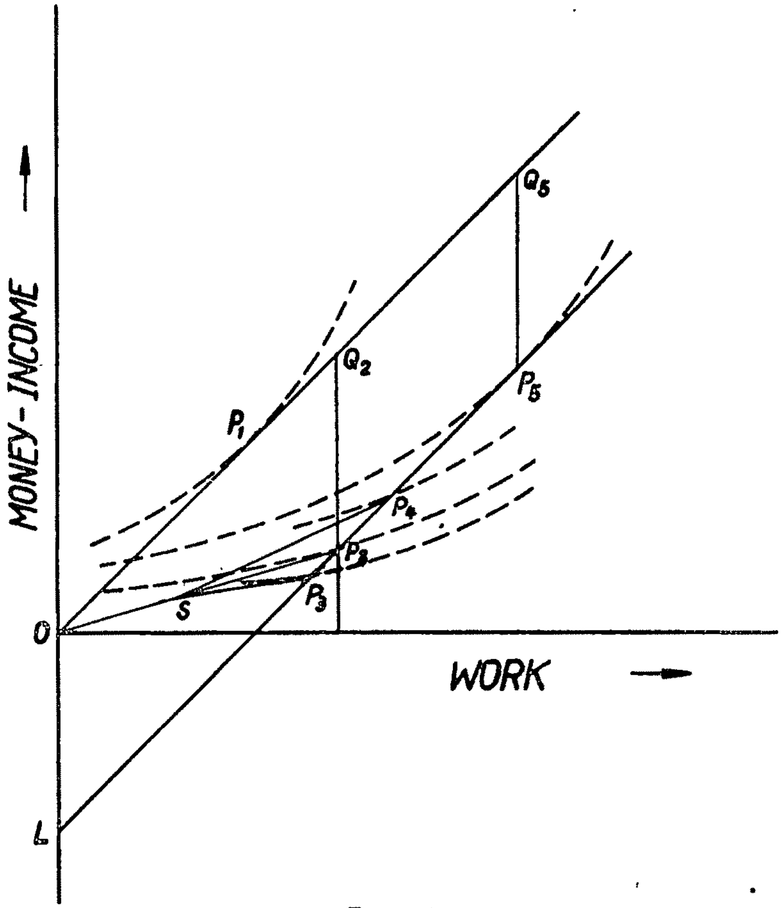

FIGURE 1

[5] Boulding, Kenneth E., *Economic Analysis*, rev. ed. (New York, Harper and Brothers, 1948), pp. 773-75.

Given OQ_2Q_5 as a rate of pay, the equilibrium position is P_1, where the rate of pay is equal to the MRS between leisure and income. Let us assume that we are to collect a tax from this individual equal to OL. One method of collecting the tax would be to levy a poll tax, leaving the rate of pay unaltered, as LP_5. Another direct tax would be a proportional income tax represented by OSP_2 which would have the effect of lowering (flattening) the rate of "take-home" pay. To extract the same amount of revenue as the poll tax does, this rate of pay must be tangent to an indifference curve at an intersection with LP_5. Thus $P_2Q_2 = OL$. Since the rate of "take-home" pay is flatter, P_2 must lie below and to the left of P_5; *i.e.*, less effort is expended and the worker enjoys a smaller net income. More important, his welfare is diminished because he must be on a lower indifference curve. This effect is greater when the income tax is progressive, as represented by OSP_3, and less when the tax is regressive, as represented by OSP_4. Given the premises of the conventional indifference curve pattern, this must necessarily be true.

Before proceeding, we wish to call attention to a relatively minor point. The indifference pattern shown in Figure 1 results in a negatively inclined supply curve for labor with the amazing effect of a heavy poll tax that causes the benighted taxpayer to work so much harder that his income after taxation is higher than if there had been no tax at all. It might be true that certain segments of the native population of South Africa or of New Guinea consider leisure a very superior good over money income; this would explain why the governments of these areas have levied a variety of head, hut and poll taxes to induce the natives to enter the price economy. It is doubtful, however, whether a large portion of the workers in an industrial society have this same attitude of extreme distaste towards income-producing work. Drawing the indifference curves with less divergence at the right would, however, eliminate this exaggeration.

Nevertheless, with any pattern of smooth indifference curves, whether the supply curve of labor is negative or positive, and as long as the absolute amount of tax to be taken from the individual is the same, the following conclusions may be reached: (1) a fixed tax or poll tax will place the individual on a higher indifference curve than any income tax, and (2) income taxes may be ranked on a welfare basis as follows, regressive, proportional and, lastly, progressive. As to the amount of work available to the community, the taxes may be ranked in the same way.

Professor Boulding concludes, ". . . that the 'best' tax on purely economic grounds is not an income tax at all but a property tax assessed on income-earning power rather than on income actually earned. The administrative difficulties of such a tax make it impossible in practice; nevertheless, the theoretical conclusion at least raises the question whether the administrative advantages of a progressive income tax on individual incomes are worth the very real economic disadvantages of such a tax."[6]

It may be, however, that Professor Boulding's proposal is not only administratively impracticable, but since income earning capacity does not always have an outward objective measure, as impossible theoretically as inter-

[6] *Ibid.*, p. 775.

personal comparison of utility. Furthermore, the economic disadvantages of the progressive income tax may not be so severe as they seem on first examination.

III.—*Critique of Professor Boulding's Ranking*

Before proceeding with the analysis, it may be well to examine the implicit assumptions of the Boulding model. The smooth indifference curve implies, first that the individual has perfect freedom of choice in the amount of work that he will perform. Secondly, it implies that he possesses no institutional bias as to the amount of work he should perform. It is doubtful whether this is true for most workers. In general, the interactions of trade unions, government, employers, and canons of respectability[7] tend to establish an accepted work week. If the acceptable work week becomes standardized at say 40 hours, the individual is reluctant to work beyond this time unless there are additional rewards.

There are two possible institutional hindrances to a free choice of working hours. One derives from the demand side of the market and is related to the exigencies of the industrial revolution. No employer, no plant manager, could possibly operate efficiently and coordinate his production effort if labor were not delivered at stated times and for stated periods of time. Thus in an industrial society the work week is likely to become standardized merely as a matter of efficiency or just to promote simplicity in bookkeeping.

The influences which operate upon the supply side are probably not as concrete. In a settled community, social habit, custom, psychology, all act to help fix the work week on the supply side. As Professor Stigler points out, cultural forces are such as to make the supply of labor from any given individual working in a given industry relatively inelastic.[8] Custom and culture set certain patterns and very few individuals feel the desire to vary these patterns indiscriminately. If the community works 40 hours a week, a given individual is not very happy working say 34 or 46 hours, and he must be given good and sufficient cause why he should do so. Unless the work week changes for the whole community, no one individual desires to work hours which differ significantly from the norm.

It is not clear in any given individual case whether the institutional bias for a standard work week derives from the supply side of the market for labor or from the demand side. The kinked indifference curves of Figure 2 represent the assumption that the institutional bias is on the supply side of the market, that is that custom and habit have fixed a socially acceptable work week. Later, the case where the bias or constraint is on the demand side will also be discussed. It may, however, be stated in advance that the main conclusions will be the same in either case.

In Figure 2, the indifference curves have a kink established at the conventional work week, let us say 40 hours. The result is that the individual offers

[7] Apropos of this, one might cite the aversion of bank tellers to the term "bankers' hours," and the vigorous defense teachers make when charged with working a short-hour week.

[8] Stigler, G. S., *The Theory of Price* (New York, Macmillan, 1946), p. 190.

40 hours per week over a significant range of wage rates. Given the kinked curves, a wage rate of "time and ½" must be offered to induce an output of over 40 hours.

All indifference curves have a kink at OY (the standard work week). Given OA as a rate of pay, the equilibrium position is Z. Let us assume a tax of OP. If this is a poll tax, the wage rate remains unchanged and all possible incomes

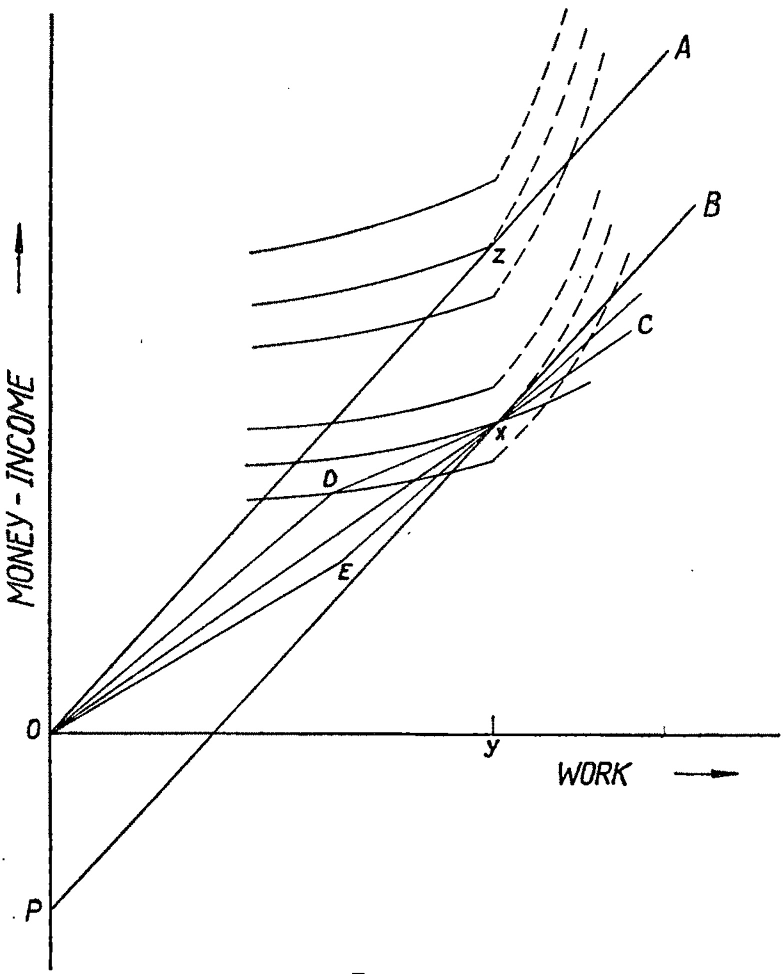

Figure 2

lie on the line PB. The equilibrium position is now X. ZX = OP = amount of the tax; XY = income after the tax. If the same amount is to be collected by a proportional income tax, the "take-home" rate of pay will be reduced to OC. However, due to the kink in the indifference curves, the same indifference curve must be reached as with the poll tax. The same holds true for the progressive tax ODX and the regressive tax OEX. Thus, in this model which

assumes a certain institutional bias, the individual's choice between income and leisure is unchanged, and the average rate of the tax may be made the same for all types of direct taxation. In Figure 1, where the individual was allowed to make a non-frictional choice between work and leisure, it was necessary to tax him at a much higher average rate if the same absolute amount of tax was to be collected from him by each tax shown. It is to be noted that in Figure 1 the various taxes started from the same initial rate and diverged at the final rate. This results in different average rates for all types of tax shown. As a matter of fact, if the individual is allowed to shift his position, different average rates are necessary to collect the same absolute amount from him for any tax. In Figure 2, not only the final rates but also the initial rates diverge. The average rate of tax is the same for all taxes. With the individual constrained as to his working hours, this must be so to fulfill the condition that all taxes take the same absolute sum from him. Under the premises of the Boulding model which assumes a higher average rate for the progressive tax, it is no wonder that this tax leaves the individual less happy than any other tax.

Figure 3 represents the alternate assumption that the limitations to the hours of work are on the demand side of the market. The employers offer work only in 40-hour packages.

As before, the rate of pay is OA and the amount of tax to be taken is OP. Again the poll tax PB, the proportional income tax OC, the progressive tax ODX and the regressive tax OEX leave the individual on the same indifference curve. Similarly, the income after tax, the absolute amount of tax and the average rate of tax are the same for all forms of the tax. The significant difference is that Figure 3 illustrates a certain amount of social coercion. Regardless of individual preference, OY work is performed, yielding YZ income before taxes, and YX income after taxes. If there were no industrial discipline, the poll tax would call forth the most effort (point T), followed by the regressive income tax (point U), the proportional income tax (point X), and lastly the progressive income tax (point V). The worker is, however, dislodged from his own optimum position by the requirements of the employer for a standard work week. It is true that there may be distortions due to taxation which are merely covered up by the discipline involved in the standard work week. It may be pointed out, however, that the coercion may exist without the tax, as in the movement from S to Z when no tax existed. One cannot say whether the amount of coercion is greater than if no tax were levied, or greater for one tax as compared with another.

Comparing the results obtained from Figure 3 with those from Figure 2, it appears that the amount of work actually offered and the welfare of the worker are in each case unaltered by the form in which the tax is levied. However, the assumptions underlying either model are not mutually exclusive. The true situation is probably represented by some combination of the inelastic supply of labor offered by one worker (Figure 2) and the inelastic demand for the labor of an individual (Figure 3). This does not imply zero elasticity of both the supply of and the demand for labor in the market as a whole. The combination of the effects of Figure 2 and of Figure 3 means that

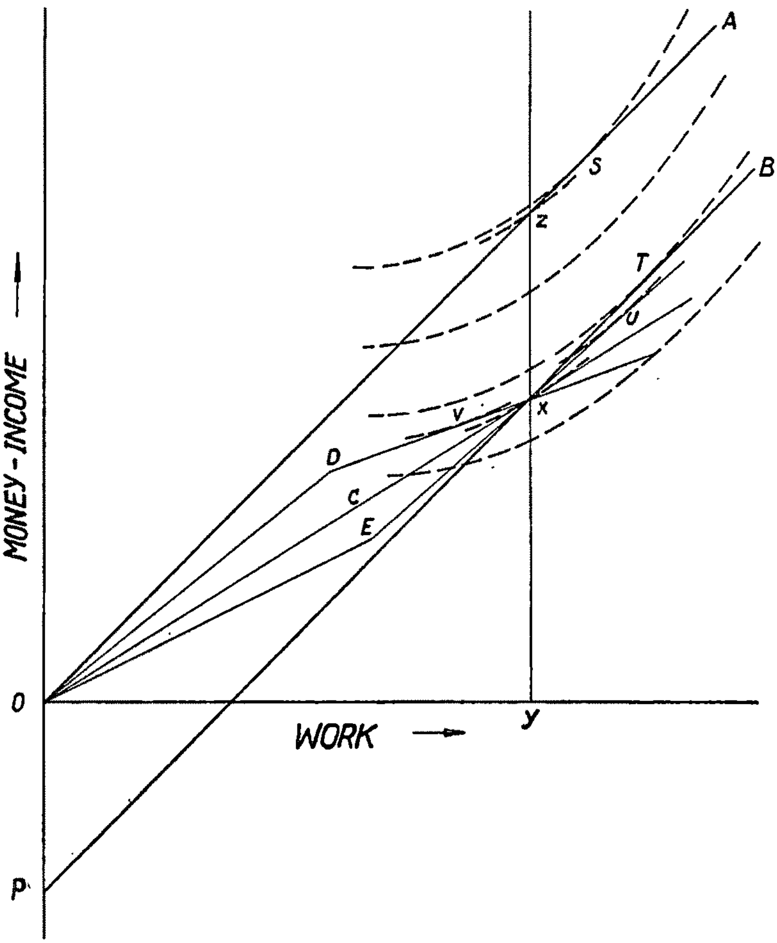

FIGURE 3

for the individual, in the short run, the length of the work week is determined by institutional factors which are more important to him than the marginal choices which could be affected by the form of the tax.

One way in which the worker can introduce some measure of elasticity in the work week is through absenteeism. One cannot deny that the progressivity of the income tax may encourage absenteeism. Nevertheless, where absenteeism is prevalent enough to constitute a problem, other factors such as war weariness, scarcities of consumer goods, and a raw labor force unaccustomed to the exigencies of industry may be more basic. Furthermore, absenteeism is atypical, and the fact that it is officially deplored may be construed as further evidence of the social pressure toward a "respectable" work week.

Institutional constraints exist even for managerial and supervisory labor,

although they may be of a more subtle nature. The executive must set some sort of example to his employees; and if the secretarial, bookkeeping, and administrative staff is hired on a standard time basis, the executive's presence is not completely variable at his discretion. If the executive's work consists mainly of decision-making, he is forced to make a certain amount of decisions (if it be considered that not making a decision is a decision of sorts). It is reasonable to assume that each decision will be the best one of which he is capable, merely as a matter of economic survival.

It must be admitted that investment choices may be different with the present form of progressive income tax than they might be with some other form of direct tax. This is an allocation of the community's resources which is not subject to the type of institutional influences discussed here (though other institutional factors may be important). The deterring effect upon risk-taking could be reduced substantially by making the tax collector share the losses more fully than at present. In fact, it has been shown that a proportional income tax, with provision for complete loss offsets, might actually increase the amount of risk taking.[9] Any progressive tax makes full offsets hard to achieve, but the deterrent effects need not be as strong as under the present tax.

IV.—*Incentives to Promotion*

We have already shown that with the existing social restraints, any direct tax of the same absolute amount placed upon an individual will have the same effect on the amount of work performed per week, no matter what the form of the tax. In dealing with choices between work and leisure, it is, however, suggested that output of work may be considered from two directions: (1) the absolute hours of work in the work week, and (2) the intensity of effort within the working hours. That is, there is to be considered an intensive and an extensive margin of effort.

What we would call intensive effort is the sort devoted to securing a promotion or some other advance in status, leading to a higher rate of pay. The poll tax leaves the whole of the monetary benefits of any promotion to the worker, and a regressive income tax would allow him to retain more than would a progressive tax. Nevertheless, given the desirability of progression between individuals, the important question is the seriousness of the effect of the progression on an individual's incentive to change his income earning power.

Given a progressive direct tax, the price, in terms of effort, of an increment to net income is higher. Considering effort and the resulting increment to income both as variables, any given *net* increment now costs more effort. Less effort will, however, be expended only if the individual's demand for increments to net income is relatively elastic. It is by no means certain that workers have elastic demands for increments to net income.[10] One would

[9] Evsey D. Domar and Richard A. Musgrave, "Proportional Income Taxation and Risk-taking," *Quart. Jour. Econ.*, Vol. LVIII, No. 3 (May, 1944), pp. 388-442.

[10] See Lionel Robbins, "On the Elasticity of Demand for Income in Terms of Effort," *Economica*, Vol. X (June, 1930), pp. 123-29; reprinted in *Readings in the Theory of Income Distribution* (Philadelphia, Blakiston, 1946), pp. 237-44.

expect some variation between individuals. Thus, it is no longer clear that the form of the direct tax has any predictable effect on this "intensive" type of effort, even when its expenditure is wholly the result of a purely monetary marginal calculation.

Defining an increment to income as a "promotion" suggests another modification. It is clear at once that many social factors modify the purely marginal comparison of effort expended and increment to income. In many cases, promotion is automatic, since the worker may be kept in grade only a limited period. Furthermore, a promotion brings many non-monetary rewards such as better working conditions, more security, and social prestige. These may be significant enough so that large reductions in the additional monetary rewards accompanying promotion may have little effect upon incentives. This may be true even in individual cases where the demand, in terms of effort, for increments to net income is quite elastic. For some of the highest income recipients, it may even be unrealistic to speak of monetary incentives. A large part of these incomes may be quasi-rents of one sort or another. To make the point clear, it is obvious that certain social groups acting mutually have a large share in fixing their incomes outside of the market, achieving monopolistic or semi-monopolistic returns. Since little effort is required to bring in these quasi-rents (being by definition payments over and above those necessary to bring the factor into production), it is obvious that the income tax can have little distorting effect in this area.

To sum up, the effect of the progressivity of direct taxes upon income-earning intensive effort is indeterminate. It depends upon the degree of the elasticity of the demand for income in terms of effort. Nevertheless, the social factors that exist supplement the demand for income. To the extent, therefore, that these social factors are operative they will minimize any loss of economic effort which might be traceable to the progressivity of the tax structure.

V.—*Conclusion*

This paper deals fundamentally with the short run, essentially a period in which the context of social factors surrounding the application of effort does not change in any considerable degree. In the short run, the imposition of a progressive tax structure is not likely to appreciably modify either the choice between income and leisure or the intensity of effort. In the long run, there is a possibility that a progressive income tax may react upon institutions themselves. There may arise, for example, certain pressures to shorten the work week. Nevertheless, since demands to shorten the work week have historically long antedated the income tax, it would be presumptious to ascribe any future shortening of the work week solely to the effects of progressive taxation. And even so, a long-run reduction of the work week need not be regarded as an unmixed evil, especially in an economy characterized by recurring unemployment.

Our basic aim has, however, been to show that an analysis of the effects of direct taxation may be considerably different in a model which allows for the introduction of certain social constraints than in a model which is ab-

stracted from them. If some institutional bias as to hours of work is allowed, effort and income are fixed before taxes. Given the fact that a socially accepted work week and standard of effort are probably readily absorbed in the individual preference pattern, social and individual frictions prevent any movement to another point of choice between work and leisure after an income tax is levied. If it is true that almost everyone has to coordinate his effort in the social complex (and most individuals probably prefer it so), then it follows that institutional factors in the main set the choice between work and leisure and that a direct tax can distort this choice but little.

The problem of the investment effects of taxation is another matter, a problem which could do with rather high-level, intensive study. Even in this field after allowing for all the social factors, it may be that the amount of distortion is not exceedingly great.

When only a few of the institutional constraints of the real world are introduced, we approach the neoclassical conclusion that the income tax is not shiftable and that it causes little distortion of resource allocation. The economist can then concern himself with the problem of achieving a rough type of distributive justice through the approximate equality of real sacrifice in the tax system. And the question of the degree of inequality of income which society should allow may be settled on its own merits.

A NOTE ON THE OVERINVESTMENT THEORY OF THE CYCLE AND ITS RELATION TO THE KEYNESIAN THEORY OF INCOME

By GEORGE A. BISHOP*

There is a family resemblance between the overinvestment theory of the expansion and downturn in the business cycle and Robertson's version of the Keynesian theory of income.[1] A comparison of these two theories suggests that a modification is necessary in the Keynesian theory (particularly in the simplified versions now current) when it is applied to the full employment or higher levels of (money) income.

I

A summary of the overinvestment cycle theory:[2] Equilibrium in the economy as a whole may be defined as equality between the flow of voluntary savings and the rate of investment. This equality tends to be maintained by changes in the rate of interest—the "natural" rate of interest is that rate which will equate the flow of voluntary saving and the rate of investment. This equilibrium is disturbed either by an increase in bank reserves which leads the banks to reduce the "market" rate of interest below the natural rate, or by an increase in the marginal efficiency of capital which raises the natural rate of interest above the market rate. In either case the difference between the two rates brings about an expansion of bank credit to finance the resulting increase in investment. The new rate of investment is larger than the flow of voluntary saving out of current income which means a rise in the money national income. The presumption is that this expansion has started from a position of full employment (unemployment being inconsistent with equilibrium). Consequently, the rise in investment can only take place through the process of bidding factors of production away from the consumption goods industries, or the "lower stages" of production. In this process the prices of the factors are bid up—the necessary result of an increase in the supply of money when total real output cannot be increased.

In equilibrium the distribution of the factors of production as between

* The author is assistant professor of economics at Union College.

[1] See D. H. Robertson, "Some Notes on Mr. Keynes' General Theory of Employment," *Quart. Jour. Econ.*, Vol. LI (Nov., 1936), pp. 171-75.

[2] See J. A. Estey, *Business Cycles*, 2nd ed. (New York, 1950) Chap. 13, and the references given there. For convenience I also refer to the overinvestment theory as Hayek's theory, although he is not its only proponent and has himself produced several modifications of the early version summarized here. The overinvestment theory, as is very evident from this summary, incorporates Wicksell's monetary theory.

consumption goods and capital goods industries (to simplify the idea of the "structure of production") is determined by the proportions of their incomes which people choose to save and to spend on consumption goods. But the expansion of bank credit brings about a larger proportion of investment to total income than people currently choose to save. Unless the expansion of bank credit can go on forever, the factors of production attracted into the capital goods industries during the "boom" must eventually go back to the consumption goods industries in order for the structure of production to correspond to the proportion of their incomes which people choose to save (Hayek assumes this proportion to be constant except for the possible effects of the redistribution of real income produced by the change in prices[3]). The downturn and the depression essentially are the result of the difficulties involved in this readjustment. Such difficulties are:

> (1) Many capital goods are specific, *i.e.*, not capable of being used for other purposes than those for which they were originally planned; major losses follow then from the change in the production structure. (2) Capital values in general—*i.e.*, anticipated values of future income—are reduced by higher rates of capitalization; the owners of capital goods and property rights experience, therefore, serious losses. (3) Specific capital goods serviceable as "complementary" equipment for those lines of production which would correspond to the consumers' demand are probably not ready; employment in these lines is, therefore, smaller than it could be otherwise. (4) Marginal-value productivity of labor in shorter investment periods is lower; wage rates are, therefore, depressed. (5) Under inflexible wage rates unemployment ensues from the decreased demand prices for labor.[4]

Further analysis of the depression and revival phases of the cycle is not necessary for the purpose of this note. The main point in the above is that the downturn and depression are explained as the readjustment period in which the structure of production is, after a period of credit expansion, made to correspond once more to voluntary decisions to save and consume.

The expansion phase of the cycle in Robertson's terms: Let us say that the immediate cause of the expansion is an increase in bank credit out of which a rise in investment is financed. The rise in investment eventually brings about a higher equilibrium level of income at which once more voluntary saving is equal to the rate of investment (equilibrium is attained by a change in the level of income rather than in the rate of interest). But during the time when income is rising to its new equilibrium level investment has exceeded voluntary saving and consumers have experienced "forced saving."[5]

[3] See F. A. Hayek, "Price Expectations, Monetary Disturbances and Maladjustments," in *Readings in Business Cycle Theory* (Philadelphia, 1944), p. 359.

[4] F. Machlup, "Professor Knight and the 'Period of Production,'" *Jour. Pol. Econ.*, Vol. 43, No. 5 (Oct., 1935), p. 623.

[5] This and the following paragraph are not a summary of Robertson's analysis of cyclical expansion, but a statement of the expansion in his terminology designed to point up a paradox between the Keynesian theory and the overinvestment theory.

The "path to equilibrium" is illustrated by the following arithmetical example:[6]
(Assume $C = 50 + \frac{1}{2}Y$, $I = 75$ (a constant), where C = consumption expenditures, Y= income which can be currently disposed of, I = investment; and $Y_t = C_{t-1} + I_{t-1}$, *i.e.*, income which can be disposed of in any period equals the sum of consumption expenditures and investment in the previous period; adjustment to the given level of investment starts from a low level of income where the average propensity to consume is 100%)[7]

Period	Y	C	S	I
1	100	100	0	75
2	175	137.5	37.5	75
3	212.5	156.25	56.25	75
4	231.25	165.6	65.6	75
n	250	175	75	75

[6] The example shows adjustment to a given rate of investment starting from an equilibrium level of income where investment is zero. But the given rate of investment could also have been regarded as an increase in the rate of investment, in which case the figure for C in Period 1 would be consumption plus the existing rate of investment, and in Figure 1 the C function would be the consumption function plus the existing rate of investment (considered as an autonomous variable).

[7] The period analysis of the approach to a new equilibrium level of income can also be shown diagramatically as follows:

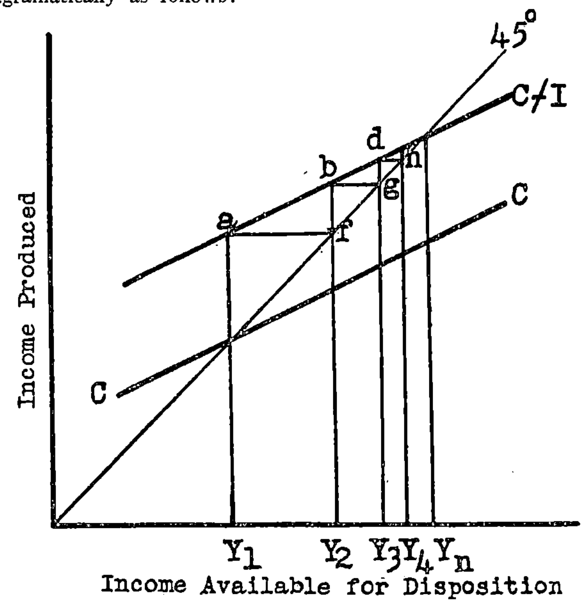

FIGURE 1

aY_1, the income produced in period 1, becomes
fY_2, the income which can be disposed of in period 2;
bY_2, the income produced in period 2, becomes

If these periods are on the average about three months long, it may take a year for a new equilibrium level of income to be closely approached after a change in investment.[8]

Putting Hayek's explanation of the expansion into Robertson's terms (or into the terms of the "instantaneous" version of the theory) raises the question of why the new rate of investment, instead of merely raising income to a new equilibrium level (as above), has to *fall* (as in the overinvestment theory) in order for a new equilibrium to be achieved. This apparent contradiction is related to the paradox—from the point of view of underconsumption theories—that the cause of the crisis is said to be a scarcity of capital or overconsumption.[9]

The difficulty appears to arise out of the lack of consideration given in Keynesian theory to what happens to the propensity to save and the rate of investment above the full employment level of income. In the diagrams by which the Keynesian theory is now explained, the usual procedure is to abstract from prices and express all the variables in real terms. In this case the savings, consumption and investment lines should logically be cut short at the income level designated as full employment. Real income cannot exceed full employment income. But these lines are often extended beyond the full employment income, particularly to show the "inflationary gap." In this case the assumption is used that an increase in aggregate demand up to full employment brings about mainly an increase in employment and real output; but beyond full employment an increase in aggregate demand brings about mainly an increase in money income with a rising price level. The variables then are expressed in money terms, or are expressed in real terms (*i.e.*, a constant price level is assumed) below full employment income and in money terms above it.

Here is the main point of this note: In spite of the fact that on the savings-investment diagram and the consumption diagram the horizontal axis shows only larger money income to the right of full employment, it is not suggested that any modification is necessary in the position or slope of the savings or consumption line beyond this point. Yet the slope of the consumption function is arrived at from considerations of the relation of real consumption to real income, and from statistical measurements of the consumption function which are carried out with the consumption and income figures deflated for changes in prices. The figures are deflated for price changes because:

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gY_3, the income which can be disposed of in period 3;
dY_3, the income produced in period 3, becomes
hY_4, the income which can be disposed of in period 4;
etc. . . . until equilibrium is reached at Y_n.

[8] The "adjustment period" depends not only on the length of the "income propagation period" but also on the size of the marginal propensity to consume or the "full" multiplier: the larger the marginal propensity to consume, the longer is the "adjustment period." See Fritz Machlup, "Period Analysis and Multiplier Theory," in *Readings in Business Cycle Theory* (Philadelphia, 1944).

[9] See F. A. Hayek, *op. cit.*, p. 360.

> A doubling of *all* prices simultaneously would presumably leave each individual in the same position as previously; we should expect, therefore, no change in real quantities, abstracting from the dynamical effects of *changing* prices. Unless a correction were made for price changes, it would appear that two different observations on the consumption function were available, and that the marginal propensity to consume were equal to the average propensity to consume.[10]

The reason for price deflation suggests that the average propensity to consume above full employment should remain a constant fraction of money income—if real income stays the same, real consumption ought to be constant also. This is what Hayek's cycle theory assumes. In fact there is some support for the assumption in consumption and income figures for the 1920's. Hansen, after examining the relation of consumption to income in *current* dollars, says:

> In general, one may conclude from these data that, once a fairly high income level is reached, as for the nine years referred to (1923-1929, 1937, 1939), approximately the same proportion of the income is consumed.[11]

Nevertheless, in all versions of these diagrams which the writer has seen, the consumption function is either projected straight or is given a smaller slope at levels of income to the right of that designated as full employment.[12]

If we use the assumption that the average propensity to save is constant above full employment, the savings and consumption functions appear as shown in Figures 2 and 3. The result is that the marginal propensity to save

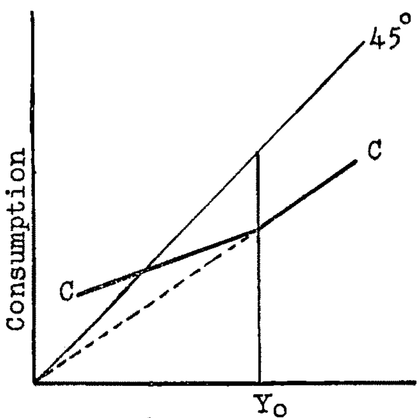

FIGURE 2

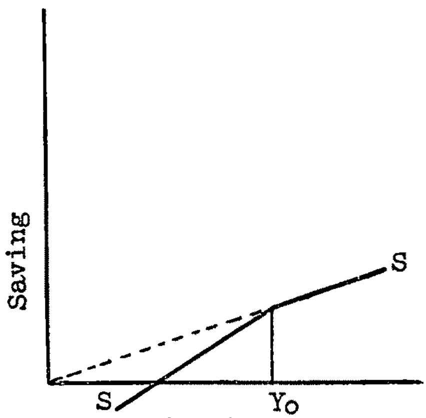

FIGURE 3

[10] P. A. Samuelson, "A Statistical Analysis of the Consumption Function," Appendix to Chapter XI, A. H. Hansen, *Fiscal Policy and Business Cycles* (1941), p. 252.

[11] *Ibid.,* p. 237.

[12] The wartime and postwar changes in the position of the consumption function plus the changing relation of disposable to national income brought about by changes in the tax structure and government transfer payments would make it very difficult to determine the slope of the function.

is less, and its reciprocal, the multiplier is greater above than below full employment. A given increase in investment therefore will have a larger effect on income. These diagrams assume a constant level of prices up to full employment income (Yo). If the variables were expressed in money terms for all ranges of income, the kink in the functions at full employment would be eliminated but the curvature of the functions would be the reverse of that often assumed.[13]

The next question should be "what is the shape of the investment function above full employment." The investment function, however, is a thorn in flesh because there are more significant variables affecting investment than there are affecting saving. The easiest way out is to consider investment an autonomous variable. On this basis some important questions can be raised. It is clear, for instance, that if investors (this case perhaps applies solely to governments in wartime) are determined to maintain the same level of real investment, the investment function will go up beyond full employment in proportion to income and prices. The result is a perfectly indeterminate level of income.[14]

The diagrams below illustrate three possibilities: Figure 4 shows a real

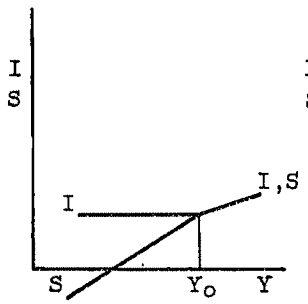

FIGURE 4

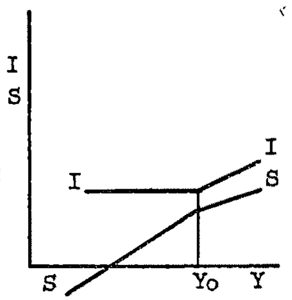

FIGURE 5

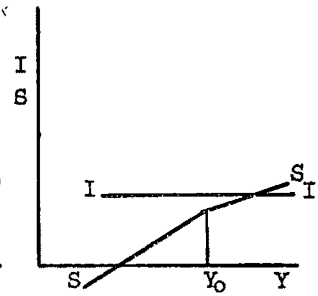

FIGURE 6

rate of investment such that equilibrium might be reached at full employment or any higher level of (money) income; Figure 5 shows an inflationary gap which gets wider (in money terms) as long as the real rate of investment is maintained; Figure 6 shows a constant money rate of investment resulting in equilibrium at a high level of income.

The following arithmetical examples make similar revisions in the example given on page 151. Example 1 corresponds to Figure 5, example 2 to Figure 6: (Assume 200 is the full employment level of income, and that above this level real income and real saving are constant so that the proportion of money income saved also remains constant. Adjustment here starts from the full employment level of income, between periods 2 and 3 in the previous example.)

[13] For example, see D. Dillard, *The Economics of John Maynard Keynes* (New York, 1948), p. 34.

[14] For a different and more complicated route to a similar conclusion see J. R. Hicks, "Mr. Keynes and the 'Classics'; a suggested Interpretation," in *Readings in the Theory of Income Distribution* (Philadelphia, 1946), p. 475.

Example 1:

Period	Y	C	S	I
1	200	150	50	75
2	225	168.7	56.3	84.3
3	253	189.7	63.3	95
4	284.7	213.5	71.2	107
5	321.5	etc.	—	—

Example 2:

Period	Y	C	S	I
1	200	150	50	75
2	225	168.7	56.3	75
3	243.7	182.8	60.9	75
4	257.8	193.4	64.5	75
n	300	225	75	75

These examples emphasize the basis for Hayek's conclusion that the higher real rate of investment which is responsible for the expansion must fall in order for equilibrium to be achieved. It rests on the assumption of a constant or fairly stable propensity to consume. The alternative to a fall in the real rate of investment, a fall in the propensity to consume, seems unlikely in peacetime but in wartime can be made an important offsetting influence.

This analysis also suggests that money income may be subject to relatively larger variations at or above full employment than below that level. Even if an inflationary rate of real investment is quickly checked by a rise in interest rates or by a change in the relative prices of consumers and capital goods, a smaller difference between the slopes of the savings and investment functions would mean larger fluctuations in income. Moreover, in the unlikely case that the government should attempt to follow the letter of the law of "functional finance," and try to maintain the full employment level of real investment, the possibility of galloping inflation would not be far away. For if private investment rose, considerable time might elapse before offsetting action was taken. One of the advantages of Robertson's version of the income theory is that it indicates a sizeable lag between a change in investment and the full change in income.[15] It means also that given the further lag in the availability of statistics we might for some time be ignorant of what was actually happening. To these lags must be added the time required for the Executive, Congress and the Federal Reserve System to take action. The alternatives for a thorough-going compensatory fiscal policy would seem to be either much more "built-in flexibility" or stand-by price and wage controls (*a la* Beveridge).

II

A communication in the *American Economic Review* for December, 1949, Franz Gehrels' "Inflationary Effects of a Balanced Budget Under Full Em-

[15] With a marginal propensity to consume of say .8 and an average income period of 3 months, the "adjustment period" would be at least two and a half years.

ployment" deals with substantially the same problem and reaches a similar conclusion. The point of the communication is that when the economy is at full employment, an increase in taxes accompanied by the same increase in government expenditures on goods and services will raise money national income by considerably more than the amount of additional tax revenues. This section is an attempt to put Gehrels' argument in terms of the above diagramatic analysis, and to suggest further implications and difficulties.

Introducing government revenues and expenditures into the diagram raises the problem of the effect of taxes on the position of the consumption function. The usual procedure is to introduce taxes by deducting them horizontally from the consumption function.[16] The result is the new consumption function after an increase in taxes. This procedure is based on the argument that out of income Y_1 people will consume after taxes, T, the same amount that they

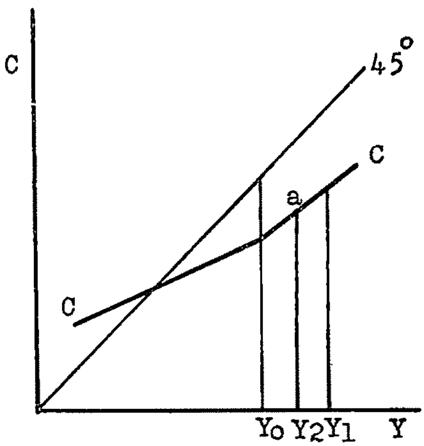

FIGURE 7

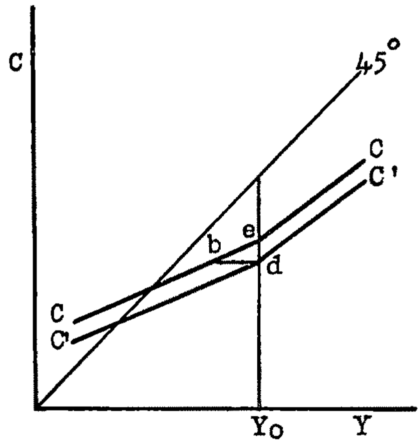

FIGURE 8

would have consumed before taxes out of income $Y_2 = Y_1 - T$. The simplifying assumption can be used that the amount of taxes is fixed, although it would be more realistic to make the amount of taxes a function of income. However, the main principles involved are not affected by using the simpler assumption.

This technique cannot be applied to the effect of taxes (or of an increase in taxes) on the consumption function above full employment for reasons which Mr. Gehrels has pointed out. In Figure 7, for example, we cannot find the shift in the consumption function by going from income Y_1 to income Y_2, with the difference between the two incomes being equal to the new taxes, T. For, if disposable income out of a given money national income is reduced, nothing happens to prices (with a given money income, aggregate demand is also given). But money income at Y_2 indicates simply a proportionately lower level of prices. Consequently, consumption expenditures at Y_1 after taxes equal to $Y_1 - Y_2$ would be larger than aY_2 for prices are higher than when income is at Y_2.

[16] See P. A. Samuelson, *Economics, An Introductory Analysis* (New York, 1948), p. 276.

How much larger would consumption expenditures be? To find out, we need to know the marginal propensity to consume in real terms. And the consumption function below full employment income, where prices are assumed constant, tells us that. The reduction in consumption then is T · mpc, where T is the amount of taxes and mpc is the marginal propensity to consume in real terms. The shift in the propensity to consume is shown in Figure 8. C′C′ is the consumption function after taxes. bd is the amount of taxes and de is the resulting reduction in consumption expenditures. (Assume for simplicity that the amount of taxes is fixed—does not depend on size of real or money income.)

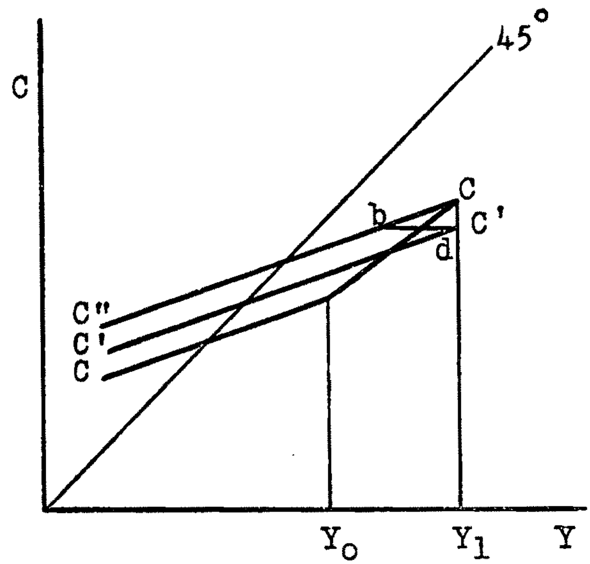

FIGURE 9

The argument can be considered in another way. The above diagrams assume that the consumption function is reversible. However, there is no reason to believe that after an inflationary rise in income, "disinflation" back to a previous level of prices is possible without causing unemployment and a decline in output. In fact, the consumption function in money terms is not likely to be reversible—a fall in prices will probably be accompanied by a fall in output and employment. Suppose, to simplify this case, that an increase in aggregate demand after full employment is reached raises only prices, but a succeeding fall in aggregate demand leaves prices at the new higher level and causes a fall in output. The diagrammatic result is shown in Figure 9.[17]

CC is the consumption function in real terms up to the full employment

[17] For a detailed discussion of the consumption function in real and in money terms, see E. C. Brown, "Analysis of Consumption Taxes in Terms of the Theory of Income Determination," *American Economic Review,* March 1950. That article does not, however, raise the point at issue in this note, namely the stability of income in the neighborhood of full employment.

income and in money terms for higher levels of income. C″C shows the consumption function in real terms but at a level of prices higher by the ratio of Y_1 to Y_0. If taxes, equal to bd, are levied (at the income level Y_1), which reduce real disposable income but do not affect the level of prices, consumption expenditures will fall by the vertical distance between C″C and C′C′, or by the amount of taxes multiplied by the marginal propensity to consume in real terms. The functions C″C and C′C′ could be drawn for all levels of money income above Y_0. But the money consumption function for *increases* in income above full employment would be as shown in Figure 8.

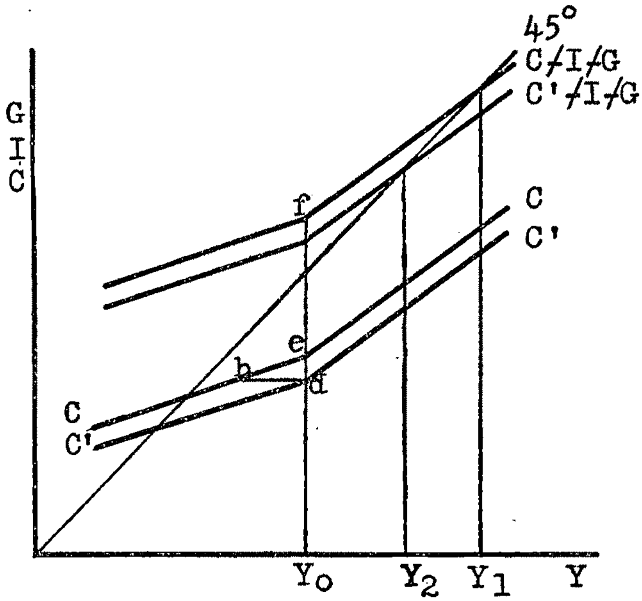

FIGURE 10

To introduce investment (I) and government expenditures (G), let us take the case where a constant inflationary rate of money investment is being maintained (so that there is an equilibrium level of income above full employment; if an inflationary rate of real investment were being maintained, the result would be an ever widening inflationary gap in money terms). In the case of a reversible consumption function above full employment (see Figure 10) the fall in income from Y_1 to Y_2 resulting from new taxes, bd (=T), then is $T \cdot \text{mpc} \cdot \frac{1}{1-\text{mpc}'}$, where mpc is the marginal propensity to consume in real terms, and mpc′ is the marginal propensity to consume in money terms above full employment (mpc′ is equal to the average propensity to consume at and above full employment).

But if the government increases its expenditures at the same time by the amount of the new taxes, income will increase on that acount by

$T \cdot \frac{1}{1 - mpc'}$. The change in money national income resulting from an increase in taxes combined with the same money increase in government expenditures then is:

$$T \cdot \frac{1}{1 - mpc'} - T \cdot mpc \cdot \frac{1}{1 - mpc'} = T(1 - mpc) \frac{1}{1 - mpc'}.$$

Since mpc′ is greater than mpc, the net increase in income resulting from the same increase in both taxes and government expenditures will be greater than the increase in taxes (or government expenditures). If mpc = .5 and mpc′ = .8, the net change in income will be 2½ times the increase in taxes. If mpc = .6 and mpc′ = .9, the net change in income will be 4 times the increase in taxes.

The generally accepted conclusion is that the same increase in taxes and government expenditures will raise income by the amount of the increase in taxes (or government expenditures). This conclusion holds on the assumption of a constant level of prices, and that assumption can be used only for income levels below full employment. The argument can be expressed as above: the expenditures will raise income by $T \cdot \frac{1}{1 - mpc}$, and taxes will lower income by $T \cdot mpc \cdot \frac{1}{1 - mpc}$, so that the change in income is:

$$T \cdot \frac{1}{1 - mpc} - T \cdot mpc \cdot \frac{1}{1 - mpc} = T.$$

The same conclusion might appear to hold for inflationary levels of income if prices were perfectly inflexible in the downward direction. But since the net result is to raise money income, it must be the marginal propensity to consume in money terms which is relevant, for that determines the size of the increase in income. And on either assumption about price flexibility in the downward direction, the net vertical shift in the C + I + G function at the initial level of income is the same, *i.e.*, T(1 − mpc).[18]

The accepted argument on the effects of the same change in taxes and government expenditures involves other important assumptions in addition to the assumption that the level of prices is constant. It assumes that the change in taxes and expenditures does not affect private investment expenditures or the propensity to consume out of any level of disposable income, and that the secondary or "repercussion effects" of increased taxes are the same as

[18] The relationship between the money rate of investment, the level of prices and money national income can be expressed tautologically as follows:

$$(\Delta I + ar)\frac{1}{1\text{-}mpc} = \Delta Y$$

where ΔI is the change in the money rate of investment, a is the intercept of the consumption function (in terms of the initial level of prices) on the vertical axis, r is the percentage change in prices, mpc is the marginal propensity to consume in real terms, and ΔY is the change in money national income.

the secondary or "repercussion effects" of increased government expenditures.[19]

Further assumptions and difficulties are involved when we try to apply this analysis to income levels above full employment. First, if the propensity to consume is in fact constant above full employment, this implies that, given the necessary time for adjustment, neither private investors nor the government can increase real investment over the real savings people choose to make at full employment. They may do so in the short run, but eventually the factors of production will be bid back into the consumption goods industries. This is the essence of Hayek's theory of the downturn in the business cycle. It indicates that the static analysis of the determination of income is not adequate for inflationary levels of income. Moreover, there is an illogicality involved in Figures 5, 6 and 10 where an inflationary rate of real investment is shown. Reverting to the terms of the period analysis (see footnote 7) we should say that the income produced at full employment in Figure 10 is fY_0. But real income produced cannot by definition be greater than full employment income. This difficulty could be overcome by shifting the position of the consumption function during the period of adjustment to a new equilibrium level of income, but presumably the result would be the same as with the ordinary procedure. Finally, using the simplifying assumption that prices are constant below full employment and that above full employment all prices rise proportionally means that we have scarcely gone beyond the "crude" quantity theory of money. If monetary and "real" analysis are to be adequately integrated, the "general" level of prices must be broken down into significant groups of prices which do not change in the same proportion.

George A. Bishop

[19] See Arthur Smithies, "Federal Budgeting and Fiscal Policy," in *A Survey of Contemporary Economics*, ed. by H. S. Ellis (Philadelphia, 1948), pp. 187-91.

COMMUNICATIONS

Some Balance of Payments Pitfalls

Most economists and many businessmen have become familiar with the balance of payments series published by various national governments. However, what valid inferences can or cannot be drawn from these statistics are not so generally understood, and the terminology is at times confusing. Most people know that " the balance of payments must always balance," at least in the forms usually published, but not so many understand why or how. The purpose of this paper is to indicate a few balance of payments pitfalls.

The international transactions of governments, firms, and residents (as distinct from citizens) in the United States are recorded in the various accounts of the U.S. Balance of Payments by either plus or minus entries. For example, it has long been customary to record the sale of exports as a "favorable" or plus action, and the purchase of foreign securities as an "unfavorable" or minus action. The algebraic sum of all these recorded transactions should be zero for any given accounting period, whether it be a week or a year, if all the conventions are followed and the data are complete and accurate.[1]

Logically, if export sales are positive and a zero balance is to be approximated, any transfers of funds by foreign importers to American exporters must be viewed as negative. International trade gives rise to two entries in the U.S. Balance of Payments. The act of sale occasions a plus entry in the merchandise trade account and the act of settlement occasions a minus entry in some other account. Whether the foreign buyer accepts a bill of exchange or settles in cash, there is a subtraction from one or other of the subsidiary Short Term Capital accounts of the United States.

A difficulty arises over what to call these plus and minus entries. Some people—the writer included—refer to plus items as Credits and minus items as Debits. However, the Department of Commerce, and hence an increasing number of people, uses the terms Receipts and Payments, respectively. However, this latter terminology is often confusing because many people not unnaturally suppose that Recepits of $x for exports means that U.S. exporters received $x in funds for their exports and that a minus entry of $y on short-term bank holdings means that Americans have paid out $y to foreign residents. Actually, each inference would be quite invalid.

A Receipts entry of $x on account of exports really means that exporters have established, through sales during the accounting period, *claims* to receive $x. Some of this they will have received and some of this they will still be owed. In international trade, partly because of the time needed to ship mer-

[1] In practice, of course, statistical errors and omissions prevent such a perfect balance ever being struck, as is evidenced by the tables that periodically appear in the *Survey of Current Business*.

chandise, settlements lag sales; export statistics usually refer to sales rather than actual receipts, and these differ in magnitude, particularly for any short accounting period such as a quarter year.

A minus entry of \$y on U.S. short-term capital bank holdings must appear as a U.S. Payment because of its negative sign. However, this does not mean that U.S. residents have paid out \$y to foreign residents during the accounting period. On the contrary, it means that, because *foreign* residents have paid U.S. residents \$y during this period, U.S. *claims* to receipts have been diminished by this amount. This revelation usually comes as something of a shock to students who previously imagined that the Department of Commerce uses the term Receipts to mean money received and the term Payments to mean money paid out.

The Receipts and Payments terminology is only valid when it refers respectively to U.S. claims to money and foreign claims to money. Inasmuch as it is *claims* that are under consideration, one might better, it seems, use the ordinary language of double entry bookkeeping and refer to plus items as Credits and minus items as Debits. There is less danger that people will interpret Credits to mean actual receipts and Debits as actual disbursements.

The true nature of the U.S. Balance of Payments is more clearly revealed if one adopts the Credit and Debit terminology. It is then seen to be a list of the claims of U.S. residents against others for payment together with the counter claims to payment of foreign residents. Thus American sales of merchandise, securities, gold, or bank balances all occasion U.S. credits and foreign debits. And any act that reduces U.S. claims to payment, such as when a foreign debtor settles in cash, occasions a U.S. Debit and a foreign Credit.[2]

The objection most frequently raised against the Credits and Debits terminology is that many people are unfamiliar with it. In the writer's opinion this is a merit. It requires people who do not understand their precise meaning to learn them. On the other hand, because most people think they know the meaning of Receipts and Payments, they may incorrectly assume that a negative Money Account indicates the acquisition of American bank balances by foreigners.[3]

[2] Students of international economics often think it strange that long-term investments should occasion debits for the lender, who is now a long-term creditor, because they overlook the fact that it is claims to payments during the *current accounting period* which occasion credits. The prospect of bond redemption, years in the future perhaps, is ignored by today's balance of payments. In the case of short-term lending, covering perhaps only 90 days, a majority of the loans made during a calendar year are repaid within the same year, and hence these transactions are not recorded in the international balance of payments. However, if U.S. residents were to own more foreign bills at the end of a year than at its outset, this would mean, other things equal, that the United States had on balance accepted these foreign bills in lieu of payment, thereby reducing its claim to payment during the period in question, so that this increased bill holding would appear as a U.S. debit.

[3] Actually, the language of ordinary accounting is becoming ever more widespread among businessmen and economists—the kind of people who read the *Survey of Current Business,* for example.

If a credit is a claim on foreign residents for "payment," one might not unnaturally wonder what constitutes "payment." The true answer is that the receipt of anything that occasions a U.S. Debit can be considered an act of payment to American residents. Some people limit the concept of payment received to receipts of U.S. funds from foreign residents. However, if foreigners relinquish foreign funds to American residents, this constitutes a disbursement by other countries, and consequently one would suppose a receipt of payment by the United States. Nowadays, a majority of economists probably suppose that the acquisition of bank balances and legal tender, irrespective of their national denomination, constitutes receipt of payment. On the other hand, in the sixteenth and seventeenth centuries, the merchantilists of those days probably looked upon exports as claims to gold. Actually, there is no reason why economists should not, and perhaps there are several reasons why they should, assess all lending and borrowing, all bank balance shifts, and all gold transfers, in terms of the claims and counter claims to merchandise imports and exports.[4]

The existence of different national currencies in the world is glossed over in the usual national balance of payments. For instance, some U.S. imports from the United Kingdom are bought and invoiced at a contracted dollar price and some perhaps at an agreed-upon sterling price. However, *all* these transactions will be represented as dollar debits in the U.S. balance and as sterling credits in the U.K. balance of payments.

In these days of exchange control the national currency in which different international transactions are denominated may be important. In certain cases it would be helpful, if the requisite data were available, to construct a balance of payments for a nation with multiple debit and credit columns, one for each currency. If this were done for the United States, it would still be true that all sterling debits should logically cancel all sterling credits, and that all French franc debits and credits should offset one another too; but, naturally, one would not expect to find any particular account, such as the bank balances account, to be in exact balance, either for individual currencies or for all currencies collectively.

There is often an unwarranted temptation to draw inferences regarding exchange rate pressures from that part of the Short Term Capital account that concerns American ownership of foreign bank balances and foreign ownership of American bank balances. We shall call this subsidiary account the Money Account. If the Money Account shows that Americans are receiving payment from foreigners—*i.e.,* the account is negative on balance—some people might conclude that the dollar was hardening. This would, however, not necessarily be so. The negative Money Account might arise from the reliquishment of dollar balances by foreigners, or, alternatively, by the acquisition of foreign balances by Americans without foreign exchange ever being sold for dollars. Additional information regarding the debits and credits of specific currency

[4] One means of payment in these days is through intergovernmental gifts. The goods exported under ECA give rise to merchandise credits for the U.S. economy. The offsetting debit is the gift voted by Congress to the foreign nations concerned.

accounts is needed before surmises can be made concerning exchange rate pressure.[5]

Nevertheless, very often there probably is an indirect, uncertain and intangible connection between the Money Account and the hardening or softening of a national currency in the foreign exchange markets. If the money account of a country is negative, that country is becoming more liquid internationally, and other countries are becoming less liquid. The first country is acquiring extra foreign exchange (which it may suddenly dump for its own currency) and/or it is regaining its own currency from foreigners (which lessens their opportunity to dump it and also their ability to sell it in support of their own respective currencies). Shifts in international liquidity may instigate fears for the future, and it is in this indirect way that the state of a nation's money account may weaken or strengthen the foreign valuations of its money.[6]

The balance of payments of a country can be used to ascertain whether that nation is saving and investing *vis a vis* the rest of the world. It is saving internationally if its Current Account is positive and dissaving internationally if it is negative. However, international dissaving may be more than offset by domestic saving—*e.g.*, Canada before 1914—so that the aggregate saving-investment of a national economy cannot be inferred from the state of its Current Account alone.

A nation's balance of payments is not analogous to any familiar accounting statement. It is not a balance sheet, if only because it does not refer to a moment in time but to a period such as a year. It is not an income statement, if only because it does not consider the domestic cost of producing exports or the probable cost of alternatively producing at home those goods which are actually imported. It is not a statement of money actually received and disbursed if only because all export sales are recorded whether sold for cash or on credit. It is a list of claims and counter claims to payment—conceivably in bank balances or legal tender of any currency—established by residents of a given nation during a given accounting period.

STEPHEN ENKE*

[5] Moreover, the existence of considerable exchange rate pressure may never be revealed by the balance of payments. Suppose there is a flight from the Swiss franc to the U.S. dollar which results in the Swiss acquiring dollar balances by selling Swiss francs to the United States at cut-rate prices. The U.S. Money Account is then zero but the dollar has probably appreciated.

[6] These reactions have now of course been described by financial writers for over a century.

* The author is lecturer in business economics at the University of California, Los Angeles.

An Uncertainty Theory of Profit[1]

Comment

Elaborating the theory set forth by Professor Frank H. Knight in *Risk, Uncertainty and Profit*, Mr. J. Fred Weston defines pure or economic profit

[1] J. Fred Weston, "A Generalized Uncertainty Theory of Profit," *Am. Econ. Rev.*, Vol. XL, No. 1 (Mar., 1950), pp. 40-60.

as "the difference between *ex ante* and *ex post* incomes" in his recent article (p. 46). Profit, he says, is the "unanticipated residual" and, as such, a nonfactor income. All other incomes, whether contractual or residual, are anticipated and consequently functional incomes or factor incomes, according to Mr. Weston.

Mr. Weston says that important conclusions are to be drawn from his clarification of profit theory. Since profit is merely an *unanticipated* residual, he concludes that firms cannot "maximize profit"; that there cannot be a "profit motive"; and that profit cannot play the determining rôle in the economic system generally attributed to it by economists. He also claims that his clarification of profit theory provides a basis for sound policy proposals.

In the opinion of this commentator, Mr. Weston, far from clarifying the subject, has further obfuscated it.

Net Revenue Returns Not a Factor Income

Mr. Weston explains that firms are not trying to maximize profit, since by his definition profit is an unanticipated income and therefore one which cannot be deliberately pursued. Instead, he tells us, firms endeavor "to achieve *situations* where the revenue-cost relationships for the firm are such that maximum net revenue returns may be achieved" (p. 54).

What are these "net revenue returns" and to whom do they accrue?

If they are not profit, they must be factor incomes. But which factor can claim these returns as a functional income? Surely not the contractually employed factors, since their compensations are fixed in advance. And if some factors are employed on a non-contractual basis, their compensations must be imputed in exactly the same way as if they were contractually employed. These residual income recipients, therefore, cannot claim the net revenue returns as a reward for their factor services any more than the contractual income recipients.

What, then, is the "factor of production" whose "net revenue returns" the firm wants to maximize? There seems to be none. All the factors—land, labor, capital, management, risk-bearing and "ultimate decision-making" get factor incomes which are costs to the firm. But net revenue returns, since they depend on revenue-cost relationships (p. 54), must represent the excess of the firm's revenue over its costs, and consequently cannot be themselves a factor income. They are what is usually called economic profit or pure profit.

"Ultimate Decision-Making" Not a Factor of Production

Mr. Weston regards "ultimate decision-making" as a factor of production. "Decision-making requires the exercise of judgment. . . . Judgment is an economic service. The principles explaining the compensation for this service are similar to the principles explaining the compensation of other services. The payment is a functional return" (p. 48).

A functional return for what? What is the function of *ultimate* decision-

making as contrasted with the decision-making commonly associated with the managerial function?

We may suppose that *ultimate* decisions are decisions to raise prices or lower them, to expand output or to contract it, in order to maximize net revenue returns. This, apparently, is the kind of decision-making Mr. Weston has in mind. In his explanation of the conventional diagram (p. 52) illustrating a firm earning profit, Mr. Weston writes that this so-called profit is actually not profit, but a "factor return which motivates the decision-makers of the firm to carry on productive operations" (p. 53). Decision-makers, then, decide whether production is to be carried on at all and how much shall be produced.

Can such decision-making be regarded as a factor of production? A factor of production is anything that contributes to production, that performs a function in the process of production, that *increases* the output of goods and services. But ultimate decision-makers do not add anything to the output of goods and services. They merely decide how much the factors of production are to be allowed to produce. And they determine how much is to be produced—*i.e.*, they "exercise judgment"—with a view to maximizing the excess of revenue over factor costs. Their function is to maximize non-factor incomes and since they frequently do so by *curtailing* output, not by expanding it, it is hardly appropriate to accord them the designation "factor of production."

The non-factor income pursued by ultimate decision-makers is customarily called profit; and the desire to maximize this non-factor income is customarily called the profit motive. Nothing is "clarified" by renaming profit "net revenue returns," and the profit motive "desire to achieve *situations* where the revenue-cost relationships for the firm are such that maximum net revenue returns may be achieved" (p. 54).

Spurious Distinction between Anticipated and Unanticipated Net Revenue Returns

According to Mr. Weston, profit is the difference between the anticipated and the realized net revenue returns. The anticipated portion of net revenue returns, he says, is not profit, but a factor income.

If the fact that they are anticipated is enough to make net revenue returns a factor income, then this factor income can be increased to any desired level by the simple device of "anticipating" it. And profit could be similarly increased to any level by the simple device of anticipating less of the alleged factor income "net revenue returns." The same income becomes either a factor income or profit, depending on the recipient's state of mind. A change in mood from pessimism to optimism and—hocus pocus—a non-factor income is converted into a factor income.

Again the question must be asked: what is the function performed by the factor claiming this income? Its function, apparently, is to "anticipate" the income; to be optimistic. Pessimism would instantly wipe out his alleged factor income, but nothing else would. Optimism is the only contribution

which this so-called factor makes to production. In other words, it is not a factor of production at all; it adds nothing to production; it performs no function in production; and consequently the income "net revenue returns" can not be a factor income.

The distinction between anticipated and unanticipated residual, between net revenue returns and profit is spurious. They are one and the same, a non-factor income, usually called profit. It is this non-factor income, usually called profit, that ultimate decision-makers are after. And of course this income is uncertain; it is almost always either larger or smaller than anticipated.

Capitalized Returns Not Necessarily Factor Returns

Mr. Weston writes that "if the differential return may be capitalized, it is no longer 'profit,' since it is no longer an uncertain (or unanticipated) differential" (p. 58). In other words, if the differential return can be capitalized, it is a factor income.

This proposition naturally follows from Mr. Weston's definition of profit. If profit is defined as an unanticipated return, it can, of course, not be capitalized. Only expected income can be capitalized. And expected income is, again by Mr. Weston's definition, factor income.

The fact that an income can be capitalized (and hence must be expected) does not, however, make it a factor income. It merely indicates the degree of optimism regarding the size and certainty of the future income. When revenue is expected to exceed factor costs, and to the extent to which it is expected to exceed factor costs, the claimants of the residual non-factor income (whether this income be called net revenue returns or profit) will capitalize it. Such capitalization does not change the fact that the capitalized income is a non-factor income, namely the excess of revenue over factor costs. This net return can be capitalized because it is expected, not because its recipients perform factor services.

Optimism regarding net revenue returns is often a feature of monopoly. The claimants of these residual returns, therefore, capitalize this so-called monopoly profit. Of course Mr. Weston must deny that a monopoly return is profit, because it is anticipated and capitalizable, whereas profit by his definition is unanticipated and not capitalizable. "The monopolist return," Mr. Weston asserts, "is compensation for the performance of a function" (p. 56).

What other function does the monopolist perform than to *restrict* output, so as to have price exceed marginal cost, since this is the situation which according to Mr. Weston defines monopoly? (p. 55) It is a strange concept of a *function* in production which regards deliberate restriction as a function meriting "compensation." Yet this is what Mr. Weston apparently has in mind, for why should he have added parenthetically that this function is "perhaps an undesirable one for the public welfare" (p. 56)?

Actually a monopoly return is not compensation for the performance of

a function in production. It is a non-factor income, the excess of revenue over factor costs. To the extent that it is anticipated, it can be capitalized, but this does not justify calling it a factor income. It is the residual non-factor income usually called profit. And of course this residual non-factor income is almost always either larger or smaller than anticipated—in other words, it is uncertain.

The Residual of Mr. Weston's Theory

What is left of Mr. Weston's "generalized uncertainty theory of profit"? As Mr. Weston himself states in a footnote (p. 41), it is no theory at all because it does not analyze the forces which give rise to profit; it is "a clarification of terminology and concepts."

The "clarification" consists in a defining away of profit until it has all disappeared, leaving only—like the grin of the Cheshire cat—uncertainty. What is ordinarily called profit, namely the excess of revenue over factor costs, is renamed net revenue return and arbitrarily defined as a factor income. The function of the factor claiming this income is either (a) to anticipate its net revenue return, or (b) to maximize its net revenue return, even if this should require the curtailment of output. Under no interpretation can this mythical and mystical factor of production be conceived as having anything to do with producing goods.

Various conclusions, for instance that there can be no profit motive, or that to speak of monopoly profits is a "misuse of terms," are nothing more than applications of the redefinition of profit.

How any of this "clarifies" anything or how "it contributes to a clear conceptual framework for analysis which is necessary to continued progress toward the understanding and solution of basic economic problems" is not "clarified."

Definition and redefinition are of unquestioned importance to science; contradictions between definitions must be eliminated as soon as they become apparent; terms denoting two or more concepts must be modified or changed to avoid confusion. But Mr. Weston's redefinitions have none of these merits. They uncover or expose no contradictions, they clarify no concepts. On the contrary, they add contradiction and confusion to an already confused subject.

Inadequacy of Any Uncertainty Theory of Profit

All is wrong that begins wrong, to reverse a familiar saying. To begin with the notion that the "dependence of profits on uncertainty" is the secure "foundation on which any future theory of profits must rest" (p. 40), is to insure the futility and fallaciousness of all that follows, down to the last sentence, notwithstanding the authority of Mr. Hicks and Professor Knight. An uncertainty theory of profits is no theory of profit at all. It merely elevates to the position of explanation, or rather of definition, one attribute of profit—uncertainty.

What can the uncertainty theory contribute to an understanding of profit? The fact that profit is uncertain? No one doubts that in a private business economy profit must necessarily be uncertain for any individual firm. If this is all the theory can tell us, it is merely propounding the obvious. It calls to mind the story about Till Eulenspiegel, the lovable prankster, convening the tailors of the realm only to tell them that they must have needle and thread in order to sew. The tale adds that the outraged tailors went after Till Eulenspiegel, who had to run for his life.

Or does the uncertainty theory tell us that uncertainty is the *cause* of profit? Of course, if profit is defined as the difference between anticipated and realized returns, one might say the profits are caused by uncertainty, for if the returns were certain, nobody would expect either more or less than the certain return. Only uncertain returns can be uncertain. The proposition boils down to a tautology, not to an explanation.

Need for a Theory of Aggregate Profit

Mr. Weston is undoubtedly right in stating that profit theory is in need of clarification. More than that, it must be made over. Traditional profit theory, as all traditional distribution theory, has an atomistic orientation. It is not concerned with the explanation and analysis of aggregate profit, but with how individual firms get their share of it (unless, of course, it is preoccupied with mere definition and taxonomy). In the competitive struggle for profit, uncertainty looms as a feature of paramount importance to any individual firm. Only from this micro-economic viewpoint can uncertainty have any significance and the explanation of aggregate profit seem unimportant. But this traditional emphasis needs to be reversed. Profit theory must yield to the general trend toward macro-economics. A meaningful theory of profits must answer such questions as:

What are the sources of aggregate profit—or of the non-factor income which is the excess of revenue over factor cost and is commonly called profit?

What are the specific conditions under which all firms taken together can make profits?

What is the relationship between aggregate profit and the size of output produced by the factors of production?

Questions such as these can never be asked, much less answered, by an uncertainty theory of profit.

ANATOL MURAD*

* The author is associate professor of economics at Rutgers University.

Comment

The writer is in hearty accord with Mr. Weston's attempt to formulate a more clear-cut concept of profit. He also views as entirely salutory Mr. Weston's efforts which emphasize the contribution of Professor F. H. Knight to the "theory of profit" and the rôle of uncertainty in economic activity.

It is, however, difficult to accept Mr. Weston's statement that "the theory of profit set forth by Knight in *Risk, Uncertainty, and Profit*" has been "adhered to by him with no major revisions in subsequent writings" (p. 41); especially in view of the remark by Professor Knight that the theory, as developed in *Risk, Uncertainty, and Profit* "needs to be entirely re-worked."[1] Nor do I feel that Mr. Weston's revisions of Professor Knight's theory are the most appropriate. My objections are two-fold: First, Mr. Weston gives the impression of attempting to preserve the notion of distinct distributive shares. Second, uncritical application of the techniques of probability theory to economic uncertainty appears to reduce the content of Professor Knight's theory.

The Notion of Distributive Shares

Mr. Weston views profit as a "distinct type of distributive share" (p. 41), and adds that "sound theoretical basis for distinguishing between wage, interest, rent, and profit components in the incomes of buyers and sellers of economic services exists" (p. 51). Also the term "factor(s) of production" is frequently mentioned (pp. 41, 47, 50, 51, 56). It is not certain if Mr. Weston views the rôle of distribution theory as that of ascertaining how various "homogeneous" groups in society receive, or carve out of the total product, their respective shares. Nowhere does Mr. Weston refer to the factors of production as land, labor, capital, and enterprise or entrepreneurship. However, if he is willing to apply the notion of a "distinct type of distributive share" to one group (entrepreneurs), it is difficult not to infer that the same concept should be extended to other groups. This appears obvious in that Mr. Weston rejects the view (stated by Professor Knight) "that every income, with accidental exceptions, contains an element of profit,"[2] because of the difficulty of utilizing the concept (p. 51). The only difficulty in conceiving of profit as a component in the returns of all productive agents is that such a concept does not lend itself to the notion that income is divided between homogeneous groups of productive factors, of which profit is presumably the component that cannot be classified into the others (p. 56).

The relevance of treating profit as either (1) a distinct type of distributive share, or (2) an unqualified income category is doubtful. The meaningfulness of the notion of distributive shares, and its by-product, factors of production, was questioned by Professor Knight in *Risk, Uncertainty, and Profit*;[3] however, he continued to use the concept and the residual theory of profit was the result. Professor Knight completely rejected the notion of factors of pro-

[1] F. H. Knight, "Professor Hayek and the Theory of Investment," *Econ. Jour.*, Vol. XLV (March, 1935), pp. 79-80, note 1. The substance of this footnote is in Professor Knight's Additional Note for the Reprint of the 1940 issue of *Risk, Uncertainty, and Profit* (London, London School of Economics, Reprints of Scarce Works, No. 16, 1946), pp. xxxvii-xxxix.

[2] F. H. Knight, "Profit," *Encyclopedia of the Social Sciences*, Vol. XII (New York, Macmillan, 1934), p. 482.

[3] *Op. cit.*, pp. 123-27.

duction in his article entitled "A Suggestion for Simplifying the Statement of the General Theory of Price."[4] The notions of "factors of production" and "wages, interest and rent as distributive shares" were hailed as "antiquated lumber" in Professor Knight's Preface to the London School's re-issue of *Risk, Uncertainty, and Profit* in 1933.[5] The most explicit treatment of "distribution theory" by Professor Knight is in his excellent article on "The Ricardian Theory of Production and Distribution."[6] The classification of productive agencies along the traditional line of land, labor and capital was emphatically rejected as a carry-over from post-feudal Europe; and the view that distribution is a process by which the total income is divided between the respective classes which were presumably the recipients of the three forms of income—wages, land rent and the return on capital "is undoubtedly the point on which the classical economist 'went wrong'."[7] Distribution theory is only a "corollary or footnote to an exposition of the mechanism by which resources are apportioned among different uses, and organized in each use, under the forces of price competition,"[8] and it "presents no special problem unless the fact of indirect instead of direct demand may be regarded as such."[9] "The notion of a 'factor of production' is an incubus on economic analysis, and should be eliminated from economic analysis" was a statement made in 1938.[10] This view was "softened" by Professor Knight in 1944 in his article entitled "Diminishing Returns from Investment,"[11] wherein he stated that he doubted that "the whole conception of 'factors of production' should be discarded outright," but he went on to add that "if we do use it, the concept of a factor should be carefully defined in abstract terms, as a group of agents interchangeable in production, and it should be recognized that no list of concrete 'factors' can be drawn up. . . ."[12]

Perhaps Mr. Weston is not attempting to rehabilitate the traditional classification of income categories. But it should be pointed out that efforts to view "distribution theory" as anything other than the pricing of production services implies some notion of distinct distributive shares, which in turn implies unique classes of productive agencies, or "factors" of production and internal homogeneity between certain productive agencies. The demise of this concern with distributive shares has had much of its impetus from Professor Knight's works. Although Mr. Weston may feel that this trend should be reversed, it seems somewhat inappropriate that his efforts should

[4] *Journal of Political Economy*, Vol. XXXVI (June, 1928), pp. 367-70.

[5] *Op. cit.*, p. xxv.

[6] *The Canadian Journal of Economics and Political Science*, Vol. I (February and May, 1935), Part I, pp. 3-25, Part II, pp. 171-96.

[7] *Ibid.*, p. 22.

[8] *Ibid.*, p. 171.

[9] *Ibid.*, p. 172.

[10] "On the Theory of Capital: In Reply to Mr. Kaldor," *Econometrica*, Vol. 6 (Jan., 1938), p. 81.

[11] *Journal of Political Economy*, Vol. LII (March, 1944), pp. 26-47.

[12] *Ibid.*, p. 33, note 7.

be presented as an interpretation of Professor Knight's views.[13]

The classification of productive agents about which Mr. Weston is most explicit is that of "hired" and "unhired" factors. Non-contractual income receivers, or "unhired" factors are those who bear uncertainty and are thus the recipients of profit (p. 47). Hired factors receive contractual returns, that is they are paid current prices, which are determined on the market, for the services of that which they own. Under perfect competition, the return to a productive agent, whether it be hired or unhired, would be identical. However, because perfect foresight does not exist, someone bears the responsibility of producing for a future market. That is, someone undertakes the function of being a residual income receiver with respect to any particular venture.

Mr. Weston's analysis is correct as long as we confine our attention to a particular venture. Profit and loss, with respect to a particular venture, must fall to the owners of the "unhired factors." However, since we are attempting to obtain some picture of profits in an aggregate sense, it is necessary to elaborate upon his treatment.

At any point in time, individuals are selling the services of the agents they own (including themselves) to those in charge of business ventures at contractual rates of remuneration as they are established on the market. These services, through a process of production, are transformed into other services which are to be utilized for consumption or further investment *via the intermediary of capital goods or investments*. Thus, any productive process involves investment, productive services available now are converted into services available in the future. It is through this investment activity that time and uncertainty enter into the economizing process and, "it is by way of the capital account that uncertainty enters into the rational management of production, and in changes in capital the special problem of profit lies."[14]

Therefore, strictly speaking, all economic subjects bear uncertainty. Although the hired factors do not bear uncertainty with respect to the venture in which they currently may be engaged, they may obtain profit, or suffer

[13] This is not to say that it is not of value to classify the various contractual forms that are utilized to effect transfers of money payments between individuals. But it should be emphasized that this is not a theoretical problem. Indeed, much of the difficulty encountered in the "theory of income distribution" arises because of attempts to classify as income, *i.e.*, payment for a productive service, what is actually a transfer payment, *e.g.*, interest and dividends. Mr. Weston is also guilty of this. On page 56 of his article, he refers to interest as a component in the income of sellers of economic services. Interest is merely a transfer payment. Both parties to a loan contract own the asset which is purchased by the proceeds of the loan; and the payment of interest is only one means whereby the co-owners distribute part of the earnings of the asset. *Cf.* Earl R. Rolph, "The Concept of Transfers in National Income Estimates," *Quart. Jour. Econ.*, Vol. 62 (May, 1948), pp. 332-44.

[14] *Risk, Uncertainty, and Profit*, p. xxxviii. *Cf.* also, Professor Hayek and the Theory of Investment," *op. cit.*, p. 80, note 1. "The *crucial* element in the profit problem in a society in which capital is employed has to do with asset values. . . . Time and uncertainty enter into profit . . . through the capital account, or specifically, through inventories and depreciation" (italics in the original).

loss, if future contractual rates of remuneration turn out to be different from what was anticipated. The fact that the owners of certain productive agencies cannot capitalize these newly anticipated income streams (*e. g.*, labor, or any source of income which cannot be alienated) is an institutional factor rather than a theoretical one.[15] This is not merely a long-run phenomenon. Profits, in this sense the changes in capital values, occur as anticipations are revised, and such anticipations are revised continually.

This raises another difficult problem. If "profit in the theoretical sense (including loss) is largely a matter of changes in the value of assets, not a difference between current income and outgo . . .,"[16] in what sense can we view it as an income category? The source of profit and loss is change; and, more specifically, change which is imperfectly anticipated by economic subjects with varying degrees of imperfection between themselves. Those who anticipated a given change more correctly than others receive capital gains; others, whose anticipations were less correct (or wrong) suffer capital losses. As Hayek has pointed out, there is no reason why the gains and losses should cancel out, and in general, the process gives rise to a redistribution of the capital stock (in the value sense) of the society—a process quite distinct from that of the distribution of income itself.[17] Nor can we measure or identify profit by observing changes in the value of the capital stock because such changes are also a function of the saving and investment process. It is an open question if profit, in the Knightian sense, is an unqualified income category at all; consequently, the attempt to treat it as a "distributive share" is questionable.

The Nature of Expectations

Mr. Weston (p. 46) defines profit as the difference between *ex ante* and *ex post* incomes of the unhired factors. Uncertainty exists because of unpredictable changes in supply and demand functions (p. 49). Attempts are made to predict these unpredictable changes and the process is rationalized by the use of the frequency distribution technique (pp. 42-43, 49). In fact, uncertainty is defined as a situation where "the dispersion of the probability distribution of the likelihood of the future event is not zero . . ." (p.43). [18] Now this raises the question whether uncertainty is being discussed at all. Professor Knight, in his discussion of risk and uncertainty, states that a "third species" of probability must be recognized apart from *a priori* and statistical probability because "there is *no valid basis of any kind for classifying instances*."[19] This distinction arises because of the uniqueness of the typical business

[15] *Cf.* Knight, "The Ricardian Theory of Production and Distribution," p. 20.

[16] F. H. Knight, "The Quantity of Capital and the Rate of Interest," *Jour. Pol. Econ.*, Vol. XLIV (Aug., 1936), Part I, p. 463.

[17] F. A. V. Hayek, "The Maintenance of Capital," *Economica*, Vol. II, new series, (Aug., 1935), pp. 267-68.

[18] This seems to be another way of saying that where one cannot be dogmatic, uncertainty exists.

[19] *Risk, Uncertainty, and Profit*, p. 225. (Italics in the original)

venture which gives rise to profit. This necessitates a two-fold estimate: (1) an estimate of the probability with respect to the outcome of the venture, and (2) another probability estimate of the "correctness" of the first estimate.[20] This is virtually equivalent to saying that the techniques of mathematical probability theory have no application to the unique business venture.

However, it may still be permissible to use the techniques of probability theory, in order to rationalize behavior in this context, provided proper safeguards are taken. Unless such precautions are taken, the nature of uncertainty, in the Knightian sense, is assumed away.

Because a business decision is made under circumstances that are not part of a homogeneous universe, it is more meaningful to state that the modal value (most probable) of the frequency distribution is the proper *ex ante* magnitude upon which the businessman focuses his attention.[21] This, however, is not the end of the matter. Two other elements enter into the decision-making process. They are: (1) "the participants' confidence in the probability forecast under consideration," and (2) "the participants' attitude toward the 'uncertainty' resulting from the uniqueness of the instance . . ., and from the possibility that an improbable outcome might materialize in this single instance."[22] This is another way of saying that, in setting up a "pseudo" frequency distribution, the participant realizes that he may be "wrong" in his estimate. Within this schema, what is the nature of the *ex ante* returns of which Mr. Weston speaks? Presumably it would be any return which would deviate from the expected modal value of the frequency distribution. However, it should be added that should the outcome deviate from this modal value, the "profits" are not entirely unanticipated because the participant has taken precautions to meet some of these contingencies.

This does not mean to say that the frequency distribution technique is the most appropriate one for dealing with uncertainty. We merely have adopted an approach suggested by Professor Fellner which "rescues" the concept for purposes of discussion. A more fruitful method for treating uncertainty appears to be that presented by G. L. S. Shackle.[23] Shackle explicitly rejects the probability approach because: (1) the law of "large numbers" has no relevance with respect to the unique venture,[24] and (2) the technique is positively misleading when used to rationalize behavior in this context.[25]

Shackle's alternative is the concept of "potential surprise." The participant envisages any number of alternative outcomes as the possible result of the particular venture. The occurrence of any one of these outcomes is not only as "probable" as any other, but would give rise to no "surprise" if any one

[20] *Ibid.*, pp. 226-27.

[21] William J. Fellner, *Monetary Policies and Full Employment* (Berkeley, University of California Press, 1947), p. 154.

[22] *Ibid.*

[23] *Cf.* his *Expectation in Economics* (Cambridge, Cambridge University Press, 1949).

[24] *Ibid.*, p. 7.

[25] *Ibid.*, pp. 112-14.

of them should occur. Of all these hypotheses carrying no "potential surprise," it is the extremes of this inner range upon which the enterpriser concentrates his attention.[26] The typical investor's vista is, however, extended beyond this range in order to give free play to the imagination and the desire to "act," and consequently he focuses his attention upon outcomes which would occasion surprise if they should occur.[27]

Within this schema, profit, in the sense of representing the difference between *ex ante* and *ex post* returns would be extremely indeterminate. Their magnitude would be a function of the individual's subjective state and would vary between individuals in relation to the range that each would personally view as not being capable of creating surprise. Even if it is held that any gain which does create surprise would be profit, it could not be said that "profit maximization" plays no allocating rôle or motivating force in a price economy (*cf.* Weston, pp. 57-59). In fact it seems more reasonable to state that the prospect for gains, themselves extremely unlikely, and which can only exist in a world of uncertainty, plays a major rôle in the actions of individuals.

To treat uncertainty and anticipations in terms of the orthodox frequency distribution approach is equivalent to ignoring the problems that are raised when the "perfect foresight" assumption is dropped. If uncertainty is accounted for by the use of a "decomposed" form of the frequency distribution technique, or if Shackle's concept is adopted, the definition of profit as the difference between *ex ante* and *ex post* returns has little meaning.

J. A. Stockfisch*

[26] *Ibid.*, p. 4.

[27] *Ibid.*, p. 5.

* The author is an economist in the research department of the Federal Reserve Bank of Kansas City.

Rejoinder

I

The issues raised are discussed in the sequence presented by Professor Murad to reduce the need for restating his observations.

The nature of net revenue returns. In this section of his discussion, Professor Murad has suggested some penetrating questions. "What are net revenue returns and to whom do they accrue?" Net revenue returns are returns which are usually called "profit," and are received by the non-contractual (residual) income receivers. This type of return should not be called profit because it represents compensation for service contributions. The conventional diagrams of partial equilibrium analysis are *ex ante* constructs. Anticipated net receipts (*pedv* in Fig. 1, p. 52, original paper) represent the expected incomes to factors who are remunerated on a non-contractual basis. There is no valid basis for attaching a special name to anticipated income of non-contractual income receivers since their income represents compensation for services of the same types as those performed by contractual income receivers (*cf.* pp.

46-47). The economic rôle of anticipated receipts to non-contractual factors,-precisely the same as the rôle of anticipated receipts of contractual factors, is to guide allocation of these resources. The net receipts actually realized, *ex post,* may be larger or smaller than anticipated. The difference between *ex ante* returns and *ex post* returns is called profit since it does not represent payment for services, arises from errors of prediction, is not anticipated and affects motivations only to the extent that experience is provided for formulating subsequent expectations.[1]

Professor Murad objects that the residual income recipients should not receive the net revenue returns because "their compensations must be imputed in exactly the same way as if they were contractually employed." But this ignores the rôle of uncertainty. Because the (uncertain) future is viewed differently by factor owners, a multiplicity of contractual arrangements is developed and different contractual positions are taken, reflecting differing expectations. While the portion of the remuneration of non-contractual income receivers representing their opportunity cost may be imputed as cost, they also receive the remainder because of the kind of contractual position they have taken.

Ultimate decision-making. Ultimate decision-making may best be regarded as the function of dealing with uncertainty. Professor Murad's interpretation is too restrictive. However, decision-making narrowly defined as choosing price and output with assumed known revenue and cost conditions would still represent an economic function. Professor Murad's error arises from defining production in physical terms instead of value terms. He states that if a recommendation is made to reduce output, there has been no economic contribution, since the quantity of physical output is reduced. But presumably there would be if the recommendation was to increase output, even if this resulted in decreased net receipts (long run)!

The economic significance of anticipations. Profit is a function of anticipations and can be altered by a "change in mood." True, but not by "hocus pocus." Anticipations are significant as they are reflected in and expressed in supply and demand functions. This is the mechanism through which a change in expectations results in a change in economic activity with consequent changes in the pattern of prices, returns, and profits. Similarly, a "change in mood from pessimism to optimism" in connection with decisions to invest may raise the level of national employment and income.

Capitalization and factor returns. A factor return is not defined by its capitalizability. A factor return is compensation for economic services, *i.e., contribution to value product.*

[1] The criticism has been expressed to me by others that under certainty net receipts would not exist even in the short run. Since net receipts and unanticipated deviations (my concept of profit) both arise from uncertainty, it is urged that what I label as profit is simply one (the relatively less important) form of profit. Although net receipts arise because of uncertainty, in the conventional diagrams net receipts are represented as definite as other revenue and cost elements. And since it represents compensation for the same types of services as the payments included in cost curves, it is best regarded as a conglomerate income category rather than a distinct type of income, profit.

Professor Murad's comments on monopoly revenues stem from confusion on the essence of monopoly which is not the *act* of having a price and output determined by equating marginal revenues and marginal costs, but rather is the *attainment of a situation* in which such a policy may effectively be pursued.

The Uncertainty Theory of Profit. My discussion here combines the material of his next two sections. Professor Murad summarizes the uncertainty theory into the propositions that profit is uncertain or that uncertain returns are uncertain, suggesting that the former is obvious and the latter tautological. These are inaccurate oversimplifications. *Because* anticipated returns under uncertainty differ from actual returns, the amount of profit cannot be estimated and hence cannot have a major motivational influence (see pp. 46-51 for a more complete statement).

But more important is the influence of uncertainty on business strategy formation, forms of contractual relationships, and the supply of willingness to bear risk (*cf. Risk, Uncertainty and Profit,* pp. 233-75). Professor Murad seems to have missed the significance of uncertainty for decision-making.

The uncertainty theory does not provide a new apparatus for direct application in analysis. Its positive contribution is its explanation of the source and nature of a distinct component in factor returns (p. 42). It is consistent with the main body of economic theory into which it is integrated. It is a theory of profit despite the misquotation of the first line in footnote 5 (p. 41) of the original paper.

A major service of the uncertainty theory is that it guides analysis away from the directions indicated by alternative theories of profit, which because they are not consistent with basic economic principles lead in paths ending in ambiguity or error. (These assertions are supported by pages 52-56). For example, Professor Murad's variant appears to ascribe profit to the pathological condition in which unneeded and unwanted exploiters formulate price and output policy for firms and seek to maximize accounting "profit," all of which is retained by them. Apparently, he adopts the accounting definition of net income as profit and regards all of the income of non-contractural factors as "non-factor" returns.

An aggregate theory of profit. Professor Murad's suggestions for a theory of aggregate profit proceed from the view that there is need for the micro-economic viewpoint to "yield to the general trend toward macro-economics." But is not the need rather to integrate the two and to make the principles formulated in one consistent with the other?

The meaningfulness of questions posed for a theory of aggregate profit depends, of course, upon the "correctness" of the formulation of the profit concept. The questions set out by Professor Murad seem to be oriented to accounting measures of "profit." This may stem from the present practice of calling the aggregates of corporate net incomes, "corporate profits," in national income statistics. Since the category contains a conglomerate of types of factor returns, but mainly an interest return, it is mislabeled by economists, "profit." Here is a place for improvement in terminology at the aggregate level. Professor Murad's and other useful questions might be explored in the attempt

to add to the valuable research of Professor Crum and others, on the rôle of corporate net incomes in the economy; such studies provide only indirect information on aggregate profit, however. Further, since profit, positive or negative, in the returns to some is at least partially matched by profit of the opposite sign in the returns to others, aggregate profit at least partially cancels out.

Questions posed by the uncertainty theory of profit may be briefly indicated. (1) What are the consequences of general over-optimism or over-pessimism of non-contractural income receivers and decision-makers for income distribution and the level of output and employment? (2) What is the influence of wars, preparedness programs, welfare programs, etc., which cause large and not completely foreseen shifts in income distribution upon anticipations and incentives? (3) What is the impact of other public policies upon the desire or willingness to bear uncertainty? (4) What effects do shifts in power between different socio-economic groups have upon the nature and forms of contractural relationships and the distribution of preferences for the different types? (5) What is the influence of the variability of returns (a measure of uncertainty) in alternative lines of economic activity on the flow of resources and what are the consequent effects of different patterns of resource allocation upon the level of employment and output? These are the kinds of questions, which include the macro-economic viewpoint, to which analysis is directed by the uncertainty theory of profit.

II

The comment of Mr. Stockfisch clarifies some major points and gives additional emphasis to concepts only briefly treated in my paper. This discussion is directed mainly to areas requiring further clarification.

1. He states that Knight's theory of profit as set forth in *Risk, Uncertainty, and Profit* has been substantially changed in subsequent writings. Although Mr. Stockfisch presents evidence of some reorientation of Knight's views, the summary of profit theory set forth by Knight in his 1942 paper on "Profit and Entrepreneurial Functions," supports my interpretation and is later than any of the citations marshalled by Mr. Stockfisch. However, the rôle of asset value changes in profit theory (the line of modification adverted to by Knight) may deserve greater emphasis and elaboration than it has hitherto received.

2. Mr. Stockfisch feels that my paper gave the impression of attempting to preserve the idea of distinct distributive factors and associated returns. Actually, my position on profit theory is neutral toward classification of payments for productive services. My formulation used the traditional language to center attention on my concept of profit in the attempt to avoid controversy on other issues. My discussion holds, in this connection, that profit is a form of income arising from circumstances sufficiently distinct to suggest that it be regarded as a unique income category.

My paper did not "reject" the view that every income may contain an element of profit. My discussion (p. 51) was not clear since it was also attempting to indicate "how much" profit was contained in returns to productive

agents. The difference between returns under uncertainty and returns under certainty was suggested as a measure of profit in the returns to productive agents. Neither the ubiquity of profit nor the measure was "rejected." The measure was held to be difficult to utilize and not appropriate for use in the analysis of the traditional treatment of "profit" in the short run under pure competition which followed.

3. The distinction set forth in his footnote 13 and the error attributed to my discussion are based on a misunderstanding of the propositions in the article he cites. The distinction Mr. Stockfisch draws is between (1) income and (2) transfer payments. This is invalid. The source cited draws the distinction between two forms of *income*: (1) nontransfer payments (income which represents payment for productive services, *i.e.*, increases the total of net value product) versus (2) transfer payments (income which represents payment for services that are not productive, *i.e.*, do not increase the total of net value product).[2]

4. He suggests that the probability distribution technique is not appropriate for dealing with uncertainty. Some of the disagreement here arises from the omission in the discussion of Mr. Stockfisch of the distinctions drawn in my section on "transformable versus measurable uncertainty" (pp. 43-44) and the failure in my discussion on pp. 49-50 to make clear that the analysis there dealt with consequences of "nontransformable uncertainty." It is valid to observe that the influence of nontransformable uncertainty may not appropriately be handled simply by use of stochastic variables. However, the difficult problems involved are not satisfactorily dealt with by Shackle's "potential surprise" approach. As a part of the explanation of this approach, it is stated that "it is upon the extremes of this inner range upon which the enterpriser concentrates his attention." This implies that the probabilities of alternative outcomes are expressed as ordinal relationships, and implicitly involves a probability distribution. As Fellner has indicated,[3] while it is a fiction to convert (nontransformable) uncertainties to certainty equivalents, the procedure is virtually unavoidable in order to utilize a manageable analytical framework. Traditional economic analysis, of course, depends heavily upon implicit conversion to certainty equivalents.

Not that analysis may proceed from nontransformable uncertainty to subjective probability distributions and thence to certainty equivalents. The significant point here is that the existence of nontransformable uncertainty alters the kinds of strategies adopted by decision-makers. The major emphasis of profit theory is that decision-making under uncertainty differs *in kind* from decision-making under certainty.[4] In the face of uncertainty, decision-makers develop hedge operations of many types, *e.g.*, greater liquidity, multiple

[2] E. R. Rolph, "The Concept of Transfers in National Income Estimates," *Quart. Jour. Econ.*, Vol. LXII (May, 1948), p. 356 and associated discussion.

[3] W. J. Fellner, *Monetary Policies and Full Employment* (Berkeley, University of California Press, 1947) pp. 152-66; *Cf.* also L. Hurwicz, "Theory of the Firm and of Investment" *Econometrica*, Vol. XIV (April, 1946), esp. pp. 133-34.

[4] I am indebted to Mr. Frank E. Norton for clarifying discussion on these points.

products, multiple plants, multiple selling outlets, advertising expenses, greater flexibility in equipment, reduced fixity of operating charges. If certainty equivalents are formulated via subjective probability distributions for the strategies *cum* hedges, the consequent violence to the reality of the decision-making process (to the extent that we know about it) is admissible. When certainty equivalents are adopted, it is meaningful to deal with *ex ante* returns.

5. In connection with the preceding point, Mr. Stockfisch's statement that "the prospect for gains, themselves extremely unlikely . . . plays a major rôle in the actions of individuals," depends upon a probability distribution approach. "Extremely unlikely" means having some (low) probability of occurrence, high enough to have a motivational influence. It signifies that those possible returns are reflected in the parameters of the subjective probability distribution. But even, if in addition to the mode (or mean) of the subjective probability distribution, other parameters—*i.e.*, dispersion and skewness—are taken into account, there still exists a certainty equivalent. This does not deny that nontransformable uncertainties influence decisions, but that their influence, as expressed in the conventional diagrams of partial equilibrium analysis, is reflected in certainty equivalents which represent *ex ante* returns.

Mr. Stockfisch observes, in connection with his exposition on profit as changes in capital values, "those who anticipated a given change more correctly than others receive capital gains." But since capital values are the present worth of *anticipated* returns, correct anticipations are already reflected in (subjectively determined) capital values. A more accurate statement is that "imperfectly anticipated" change may have either a favorable or unfavorable impact.

6. The relationship between profit and capital value changes deserves additional discussion. Mr. Stockfisch states, "Profits, in this sense the changes in capital values, occur as anticipations are revised, and such anticipations are revised continually." Whereas in his comments on "The Nature of Expectations," my formulation is said to be defective because *ex ante* returns are said to be indeterminate, at this place his emphasis is on the continuous revision of determinate *ex ante* returns as measures of capital value changes (or profits).

Here he defines profit, following brief hints dropped by Knight, as the difference between successive *ex ante* long-run returns. This formulation is consistent with my definition of profit if in successive couplets of *ex ante* returns, one of the two returns is considered an *ex post* return.

Expressing profit in terms of capital value changes has merit but also presents difficulties. On the favorable side, it views every owner of sources of services as an economic unit, seeking to maximize the present worth of the stream of income which may be expected to be derived from his service potential. It emphasizes the generality of the profit component in incomes because of the omnipresence of capital (*e.g.*, training, experience). It makes clear that all economic agents bear uncertainty. It further emphasizes the invalidity of conventional representations of "profit" since the continuous

asset value revisions envisaged would result in the inclusion of all rents in the average cost curves and hence under pure competition price would always equal average costs.

On the other hand, all incomes are viewed as streams in an extremely elongated time dimension and all anticipated streams of income are expressed as capital values. The concepts are difficult to express by easily managed apparatus. It raises the question of how the appropriate period for revision of anticipations is determined. The measurement and indentification problems become even more baffling.

J. FRED WESTON*

* The author is associate professor of finance at the University of California, Los Angeles.

Mises' "Human Action": Comment

In the June, 1950, issue of this *Review,* Mr. G. J. Schuller, in his review of Ludwig von Mises' *Human Action,*[1] makes various criticisms of the book which deserve reply.

1. Schuller claims that Mises asserts a "law of social development whereby the majority in the long run . . . chooses the system which provides the higher standards of living." Mises makes no such absurd claim. What he does say is that the majority of a people choose that form of government which *they believe* will provide them with highest standards of living. This is simply saying that all exercise of power rests on the consent to obey by most of the inhabitants.

2. Schuller maintains that Mises "provides no clear test of incorrect versus 'correct praxeological reasoning.'" The tests are, on the contrary, clear enough. Praxeology consists of two main elements: (1) the fundamental axioms, and (2) the propositions successively deduced from these axioms. Neither the axioms nor the deduced propositions can be "tested" or verified by appeal to historical fact. However, although the axioms are *a priori* to history, they are *a posteriori* to the universal observations of the logical structure of the human mind and human action. The axioms are therefore open to the test of observation in the sense that, once postulated, they are universally recognized as true. Such recognition may be accused of being "introspective," but it is nonetheless scientific, since it is an introspection that can command the agreement of all. The deductive propositions are tested according to the universally accepted laws of logic. (Laws, incidentally, which are also *a priori* to historical fact.) The fact that a proposition comes at the end of a "long chain of deduction" makes it no less valid than a proposition at the end of a short chain.

3. It is curious that an economist who is convinced of the truth of economics should be accused of "uncompromising dogmatism." An attitude of frank conviction is a refreshing change from the timidity and apolegetics that are all too frequent among economists. Schuller wonders how Mises can unabash-

[1] *American Economic Review,* Vol. XL, No. 3 (June, 1950), pp. 418-22.

edly criticize the logic of such eminent predecessors as Ricardo and Menger. He forgets, as Mises does not, that Mises is building on a great structure of economic thought to a large extent developed by these men. Coming later, he is in a position to refine the structure as well as to add new developments of his own.

4. There is no conflict between an historical and a praxeological statement when Mises says that the gold standard is an historical fact and that this standard was responsible for increasing welfare, liberty, etc. "Money" is a praxeological category, arising when the market chooses a commodity to serve as a general medium of exchange. Such choice of a money leads to enormous economic benefits, as is demonstrated by praxeology. Furthermore, governmental interference with the functioning of this money leads to consequences, according to Mises, universally recognized as undesirable. This, too, is a praxeological statement. But that the commodity *gold* happened to be chosen by the market is in the category of an historical fact.

5. Schuller's next criticism is a dual one, with one part contradicting the other. He asserts (1) that Mises fails "to bridge" the dualism between *a priori* praxeology and *a posteriori* history, and (2) that Mises succeeds in so doing for the free market but not for other types of markets. Schuller maintains that in order to forge this bridge, Mises would have to furnish "positive theorems covering all types of historical situations" and "instructions for determining when the conditions of a particular situation coincide with those assumed by a particular theorem." Such stipulations are absurd, and can never be fulfilled by any theorist. It is precisely the task of the historian to attempt to explain historical situations by the use of praxeological theorems, to uncover their complex interactions in the actual historical situation. But even at best, such historical work is tentative and inexact, relying to a large extent on judgments of relevance and emphasis by the historian. It is vain to search for magic formulas to provide simple explanations for all historical events, and the knowledge that such attempts are vain accounts for Mises' "failure" to provide the "bridge."

Schuller's contention that Mises confines his praxeological theories to the free market alone is clearly erroneous. Mises first develops the praxeological laws of the free, or unhampered, market. He then analyzes the effects of each different type of government intervention in the market. Part Six is wholly devoted to this analysis. In Part Five he analyzes the consequences of a totally socialist economy, where the free market in factors of production is abolished. So Mises, far from giving us a "single standard . . . the color white alone," analyzes all the different types of situations, white, black and all shades of gray.

When Mises, on page 854, implies, in Schuller's terminology, an unilinear relationship between departures from the free market and departures in consequences, he is not simply making an offhand assumption. He is summarizing the results of the analysis of Parts Five and Six, an analysis which Schuller seems to ignore completely. His standard does not become normative. As an economist, Mises is value-free. But, if the demonstrated results of intervention and socialism are such as to lead to consequences which everyone will con-

sider undesirable, then Mises as a citizen certainly has a right to agree that they are undesirable.

6. Schuller then cites various instances of what he calls arbitrary applications of catallactic principles to historical reality. In most of the cases, however, he cites not applications, but the principles themselves.

a. Mises is not being arbitrary in stressing monopoly and competitive prices rather than a special type of "monopolistic competitive" price. This is a result of trenchant criticisms of the monopolistic competition analysis. Mises also discusses cases of incomplete monopoly, duopoly, oligopoly, cartels, price discrimination, and monopsony, and furnishes new insights on all of these problems.

b. Schuller contends that Mises' theory of business cycles assumes full employment at the beginning of the interventionary credit expansion, and "is not concerned with the effectiveness of the same policy under large-scale unemployment." This charge is completely false; Mises specifically deals with this problem on pages 576-78. He there demonstrates that his business cycle theory is fully applicable to conditions of large-scale unemployment of factors of production.

c. Mises does not have to explain how systems other than the pure market have managed to survive historically. Merely to survive, regardless of the level of existence, does not require more than the rudiments of the free market, more than a little white in the gray picture. Whatever economic success other systems have had was due to those elements of the market that were permitted to exist.

d. It is difficult to understand what Schuller means here. Mises does not offer any "stagnation" thesis. If Schuller means empirical illustration of the unfortunate consequences of government intervention, such evidences abound. One has only to point to the condition of present-day England, or observe the various "dollar gaps" to mention just some of the countless possible illustrations.

e. Here is a point which especially seems to worry Schuller—the contrast between man's economic rationality on the market, and his irrationality in the political sphere. Mises is not contradicting himself here, but asserting an important truth about human behavior. It is a truth that is not difficult to explain. When an individual chooses purchases on the market, either as consumer or as entrepreneur, he has certain definite guides for selection. The consumer knows the prices of the various goods, and he can test the quality by selection. If he buys what is labelled "breakfast cereal" and it turns out to be a package of hay, he knows it soon enough, and that firm soon finds itself out of business. The consumer is in a position to arrange a set of preferences according to his tastes, to evaluate the products open to him. But, in the political sphere, the reverse is true. The consequences of different sets of political measures can only be understood by the ability to grasp complex chains of abstract praxeological reasoning. The vast majority of the voting public do not have this ability. There is no empirical test that will demonstrate one type of governmental measure valid as opposed to another type. Consequently, the voter turns to whichever political leaders state their case

with the greatest propaganda ability, *i.e.*, to demagogues. Thus, suppose that the government inflates the money and credit supply and prices rise. One party can point out the cause and call for a cessation of the governmental inflation. The other party can assert that the inflation is caused by wicked speculators and profiteers and that inflation of the currency has no effect on prices. The voting public has no rational way to choose except by exerting powers of reasoning which they do not possess.[2]

Governors appointed by popular vote are Führers, while corporation directors are mandatories of the stockholders. This is no contradiction either. The corporation director is completely at the mercy of the stockholders. The head of the state, however, exercises, to a greater or lesser degree, coercive powers over the people. To the extent he exercises coercive power he is a dictator rather than a mandatory. The "electoral mandate" is rather a choice between two sets of aspirants to such a dictatorship.

7. Schuller reads into Mises the truly absurd statement that *all* intelligent choice of means requires calculability. He then asks how Mises can intelligently choose between market economy and socialism. Mises never, explicitly or implicitly, claims that *all* intelligent choice requires calculability. Obviously, the consumer does not have to calculate in order to decide whether he prefers to read *Hamlet* or a detective story the next evening. Calculability is only a requisite in the choice of *means of production* in a complex economy. It is not required for any other judgments of value or for Crusoe-type choice of means in a simple economy. Certainly, Mises offers no basis for Schuller's charge. Indeed, in his essay, "Economic Calculation in the Socialist Commonwealth," Mises explicitly states the conditions under which calculation is required for intelligent choice.[3]

8. When Mises presents us with the choice between the free market and socialism, he is saying that in-between systems of a hampered market are not coherent, consistent systems. He demonstrates that any measure of government intervention in the market creates problems and consequences which present the people with a further choice: repeal this measure, or effect another measure of governmental intervention. Thus, if we may use the term in this sphere, we may say that an interventionist society is always unstable and in "disequilibrium," while the only societies in "equilibrium" are the free market or socialism, since interventionist measures logically lead to one or the other. Since a socialist system cannot exist, the only intelligent choice is the purely free market.

9. Since Mises demonstrates that every form of government intervention in the market creates consequences that lead to an economy worse than that of the free market, Schuller cannot distinguish between rational and irrational forms of government intervention, or designate market intervention as a "technology." For Mises, all government intervention in the market is irrational and therefore contrary to economic law.

[2] *Cf.* the excellent discussion by the late Professor Schumpeter in *Capitalism, Socialism and Democracy*, pp. 256-64.

[3] *Cf.* Mises, in *Collectivist Economic Planning*, ed. by Hayek, pp. 95-110.

Mises, incidentally, does not advocate "inaction," as Schuller maintains. He advocates the confining of the action of government—which is merely the social apparatus of coercion—to the sphere of its competence: the defense of the citizen against violent invasion of his person and property.

10. The book is not too long and repetitious; if anything, it is too short and condensed, and could well have been expanded to the size of a two-volume work. Nine hundred pages are certainly not too long for a book which Schuller admits is one of the first general treatises on economics to appear in a very long time.

11. The term "uneasiness," contrary to Schuller, is the traditional term, rather than "dissatisfaction." "Uneasiness" goes back to John Locke.

12. Schuller's assertion that the index to *Human Action* is too short is absolutely unexceptionable.

MURRAY N. ROTHBARD*

* The author is a graduate student in the department of economics, Faculty of Political Science, Columbia University.

Rejoinder

In the interest of efficiency in this discussion, I hope Mr. Rothbard's thorough analysis meets with Professor Mises' approval, particularly in matters of interpretation.

1. Both the voluntarist and meliorist positions may be found in Mises. On the former: "Only if men are such that they will finally espouse policies reasonable and likely to attain the ultimate ends aimed at, will civilization improve. . . . Whether or not this condition is given, only the unknown future can reveal" (p. 193). On the latter: "Human society. . . . is the outcome of a purposeful utilization of a universal law determining cosmic becoming, *viz.*, the higher productivity of the division of labor" (p. 145). "The chiliastic empires of dictators are doomed to failure; they have never lasted longer than a few years. We have just witnessed the breakdown of several of such 'millennial' orders. Those remaining will hardly fare better" (p. 153). The two strains are rooted in Mises' praxeological axioms. After postulating a common human striving for abundance (p. 19), he tells us that "reason [is] man's most characteristic feature" (p. 176) but that "man very often errs in selecting and applying means" (p. 20).

The ancient problem in the social disciplines of uniting science and policy is not solved by Mises' question whether "characteristically reasonable men" (p. 176) "will finally espouse reasonable policies" (p. 193). In my review I asked whether Mises would try to reconcile this dilemma by regarding his law of development as a praxeological law, effective only so long as its assumption of rational action obtains, while regarding the specific future outcome as dependent also on historical accidents (perhaps including knowledge) which may abort the inner tendencies and therefore make apodictic prediction impossible. Rothbard would reconcile the dilemma by his profound observation that men will choose whatever system they believe will accomplish their objectives.

2. Mises uses the methods of introspection, deduction, and (incidentally) reference to fact. He fails to distinguish between the ideal use of these, which perhaps would result in a perfect praxeology consisting of incontrovertible truths, and the use of them by a fallible mortal like himself. Introspection is a valuable scientific tool, but its very immediacy, which enables the user to avoid errors of more roundabout methods, may lead him to subjective bias, inaccurate generalization from himself to all others, and overconfidence in the soundness of his conclusions. The conclusions should be checked carefully by other methods, such as observation of the behavior of persons unlike one's self and questioning of them concerning their motives. Mises often rashly assumes that persons who act as he would, do so for the same ends which he finds in himself and that those who act differently seek the same ends but have erroneously chosen the wrong means. Any person's ends may be arranged as "means" to more remote ends in an indefinite architectonic chain. Logical error may occur in his choice of means for a given end or in his rationalized statement of the ultimate end for which a more immediate end is desired. No fallacy is more widespread than that of calling another man a fool because his actions do not promise the attainment of ends which observers impute to him based on their own introspection. In Mises' uncritical usage introspection becomes not a scientific method but the basis of a creed. The words which he attributes to the worshippers of collectivism may with equal appropriateness be attributed to the worshippers of introspectivism: "We are right because an inner voice tells us that we are right and you are wrong" (p. 152).

Are the praxeological axioms universally and incontestably true in the same sense as the laws of logic? The denial of the laws (or rules) of logic results in absurdity. The denial of Mises' laws does not. From the rules of logic alone no substantive propositions can be deduced. Idealists and materialists, atheists and Thomists, capitalists and communists all may use the rules of logic with equal facility to arrive at or support their opposed positions. But Mises attempts to deduce substantive propositions from his laws—*e.g.*, that governmental curbs on the drug traffic, or alcoholic "prohibition," lead to socialism (pp. 728-29).

That Mises' use of logic as a scientific instrument falls short of perfect rigor may be readily demonstrated. (a) After telling us that "it is nonsensical to reckon national income or wealth" or other aggregates (pp. 218-29), he insists that the free market "raised the average standard of living to an unprecedented height" whereas intervention's "inexorable final consequences" include a "drop in the quantity of goods produced" (pp. 741-51).[1] (b) His example of choice on page 201 (operas) does not lead to his inferences.

The higher a deductive edifice is built, the more numerous are the syllogistic steps required in its construction and the more numerous are the assumptions (stated or implied) on which the structure rests. The probability of error (except for supermen) increases with both.

So far as empiricism is concerned, Mises tells us his axioms are logically

[1] Assertions of the latter type are attributed elsewhere to "understanding," not "reason" (pp. 674-75), but not in the above citations.

prior to fact and therefore cannot be tested by fact. Yet he often (and Rothbard: *e.g.* 6, d) cites facts as if they provided support for his conclusions and for the axioms, postulates, and logical procedures from which the conclusions have been derived. Mises thus disarms his critics of a weapon which he renounces in principle but uses in practice. And such phrases as Rothbard's "universally recognized" (points 2 and 4) or "everyone will consider" (point 5) surely are not meant as empirical assertions, since "the vast majority" cannot "grasp complex chains of abstract reasoning" (point 6, e).

3. The fact that Mises is able to criticize and improve upon the doctrines of eminent predecessors whose intellectual powers were not inferior to his own should lead him not to arrogance but to the expectation that his own incontrovertible truths some day will meet a similar fate.

4. In the passage to which I referred, Mises' adulation is bestowed not upon the adoption and use of a monetary standard as such but upon that of the gold standard in particular and his wrath is vented not upon critics of a monetary system but upon critics of the international gold standard. For example: "Nobody is in a position to tell us how something more satisfactory could be put in place of the gold standard" (p. 470). The point of my criticism is that Mises does not label his assertions as praxeological axioms, praxeological propositions, historical observations, or personal opinions, so that it is difficult for the reader to know how to treat them.

5. The second assertion is not mine. Mises admits that his free market has never existed. He constructs a pier on his theoretical island of free competition, but how can he build a span from this to historical reality? Another independent pier, even on another theoretical island, would help. But Mises' socialist pier is simply a downward appendage of his span from free competition. If one insists on using the praxeological method, one's principles should be numerous and complex enough to serve as a guide in understanding the various general *types* of historical situations, even though they may never fully explain the *cases* under each type. For this purpose a single standard would be adequate only on a unilinear assumption: *i.e.,* that (a) all possible variations in market conditions, size of firms, unions, tax laws, antitrust laws, monetary regulations, etc., can be arranged in a continuous scale stretching between free competition and socialism and (b) the scale of interventionary degrees is paralleled by a scale of functionally related consequences ranging, say, from full utilization of resources at one end to zero production at the other. If something of this nature is not Mises' position, his single standard of free competition requires supplementation. If this is Mises' position, and if we may test it with facts, then it is clearly false, since (as J. M. Clark, Arthur R. Burns, and others have shown) there are many cases in which an increase in intervention leads to results which approximate more closely, not less closely, those attributed to free competition. For example, during World War II the United States economy experienced the greatest amount of intervention in its history yet national production and capacity soared to a record high. This does not prove that intervention or war is desirable but it calls for an explanation more complicated than Mises' single standard.

6. Acceptance of Mises' stated axioms does not necessarily imply acceptance of the "principles" or "applications to reality" which he has drawn from them, even though his logic may be impeccable. When a logical chain grows beyond the limits set by stated assumptions, it uses unstated assumptions. The number of unstated assumptions (axioms, postulates, or other) in *Human Action* is enormous. If Mises denies this, let him try to rewrite his book as a set of numbered axioms, postulates, and syllogistic inferences using, say, Russell's *Principia* or, closer home, Von Neumann's *Theory of Games* as a model.

a. To Mises duopoly and oligopoly are not types of market relationships but transitional phenomena, "a scheme for the attainment of a monopoly position." "One may wonder whether duopoly and oligopoly are of practical significance. As a rule the parties concerned will come to at least a tacit understanding concerning their quotas of the reduced amount of sales" (p. 360). Are these intended as principles or as descriptions of reality? If the latter, we can test them by empirical investigations—and we will find them highly doubtful. But whether intended as principles or not, do they necessarily follow from Mises' stated "axioms"?

b. The passage cited by Rothbard deals with "The Role Played by Unemployed Factors of Production in the First Stages of a Boom" in which "unused capacity . . . is an outgrowth of errors committed in the past." Credit expansion, Mises tells us, then results in an "inappropriate expansion" of one or a few industries. In my review I referred to the effect of interventionary credit expansion "under large-scale unemployment." Even if one grants that this unemployment is the result of certain past interventionary measures, one may logically assert that certain present interventionary measures may diminish this unemployment without creating more severe maladjustments than would occur in a non-interventionary revival. The same unilinear fallacy occurs in Mises' refutation of Keynes (p. 737).

c. If a partially free market could persevere in the past, then perhaps intervention is not cumulative and perhaps the rudiments of the free market will survive the rough handling of New Dealers and socialists enough to preserve civilization and the human race in the future.

d. Mises asserts that capitalism is being beset cumulatively by "economic depressions, mass unemployment, capital consumption, famines," "exhaustion of the reserve fund," "restriction of output," etc., (pp. 851-55). Many whom he would call interventionists and socialists agree in large part with him, but for different reasons—*e.g.*, Karl Marx, J. M. Keynes, Alvin Hansen, or Benjamin Higgins. Some supporters of the free market quite as vigorous (if not as extreme) as Mises, on the other hand, have combatted in whole or part the stagnation thesis—*e.g.*, Carl Snyder, George Terborgh, J. Frederic Dewhurst, or H. G. Moulton—generally on the ground that the ravages of intervention, as well as of "maturity," have been insufficient to destroy the effectiveness of the free market component of our economy. Mises does not attempt to meet their arguments. Rothbard's cases may be interpreted in many ways. One may say, *e.g.*, that the triumph of intervention in England today is the consequence of the previous rule of Mises' philosophy. This is an inadequate

explanation, but it contains at least as much truth as Rothbard's.

e. I do not believe consumers are as rational or informed and voters are as irrational or uninformed as Mises or Rothbard claim. Producers spend years learning their specialties, as do economists and politicians; consumers and voters are Jacks-of-all-trades who can be fooled by specious arguments not only of unscrupulous or ignorant economists and politicians but of unscrupulous or ignorant shopkeepers. Complex chains of reasoning are required for consumers to select intelligently an automobile or television set. Political decisions often are more difficult than shopping decisions, yet the same policy difficulties that perplex the electorate frequently perplex those elected representatives (and social scientists) who are aware of their own limitations. Politicians have often been accused of entertaining no ideas of their own and of supporting policies which they believe will maintain the constituents' effective demand for their re-election. The principle of modified or limited competition is at work in a democratic polity and a market economy, with the consumers and voters sometimes ruling, sometimes being ruled, in each. In alleging that consumers are rational and voters are irrational Mises provides us with his own brand of "polylogism." And if the voting public "do not possess" "powers of reasoning," then the chances of adoption of Mises' praxeology under a democracy are slim indeed, unless the elected "dictator" can be won over directly. Some of Mises' and Rothbard's statements seem to imply that if they had to choose between democracy plus intervention and outright dictatorship plus the free market[2] they would choose the second.

7. My interpretation here is based on such assertions as the following: "Where there are no money prices, there are no such things as economic quantities. . . . There is no means for man to find out what kind of action would best serve his endeavors to remove uneasiness as far as possible" (p. 210). "Those things which do not enter into the items of accountancy and calculation are either ends or goods of the first [consumer] order." In this sphere (*e.g.*, *Hamlet* and the detective story) choice is mere ordinal comparison (p. 216). Rothbard has convinced me, however, that my interpretation is erroneous, that Mises requires calculability for intelligent choice only in certain "economic" means-ends relationships, and that point 6 of my review, except for its last sentence, should be withdrawn. The contradiction between Mises' treatment of economics and politics will have to be reconciled on some ground other than that in my review. My error is based on an ambiguity that runs through the entire book. Mises' propositions that subjective value economics may be extended into a general theory of human action (p. 3), that "economics [is] up to now the only elaborated part of praxeology" (p. 66), that all action is an "exchange" of "a less desirable condition" "for a more desirable" one (p. 97), and that economics cannot be precisely distinguished from praxeology (p. 235) make it difficult to determine not only in what area of human action he requires calculability but also to what extent most other principles of *Human Action: A Treatise on Economics* are intended

[2] The two elements of each alternative are conceptually compatible.

to apply to the subject matter of its title, on the one hand, and to what extent they fall into the more modest range of inquiry designated by its subtitle, on the other.

8. "Coherence" and "stability" may be prerequisites for conceptual existence in the land of praxeology but "incoherence" and "instability" thus far have characterized space-time existence in the world of history. It is a more important qualification for an intelligent course of action to be *possible,* no matter how transitory, than for it to be "logical." Nowhere does Mises prove that the purely free market possesses the former attribute; coherence and stability are insufficient evidence of practicability, even on his own grounds (*e.g.,* socialism).

What does "interventionist measures logically lead to" mean? Either Mises believes that interventionism is cumulative and necessarily leads toward socialism and into "chaos" (another undefined term), or he does not. If he does, can he explain how western nations reversed mercantilist intervention and established partially free markets in the 18th and 19th centuries, or how they accomplished partial decontrol after World Wars I and II? Can he explain how the purely free market is ever to be attained? On the other hand, if interventionism need not be cumulative (and Rothbard says it logically leads to the free market as well as to socialism) then is it necessarily incoherent, unstable, and transitory? If interventionism logically points in two opposite directions (toward zero and infinity), does it have to continue in either until it reaches respectively Elysium or chaos?

9. If "all intervention is irrational," then how can Mises sanction it for "defense of the citizen against violent invasion of his person and property"? Mises says: "The decision about each restrictive measure is to be made on the ground of a meticulous weighing of the costs to be incurred and the prize to be obtained." In fire regulations the prize outweighs the costs (p. 741). Thus he admits that government interference in the private markets for armaments, mercenary soldiers, non-fireproofed buildings, or burglar's equipment can attain the ends sought and need not lead to socialism. Once he grants the distinction between intelligent and unintelligent intervention, and even the need for the former to preserve a partly free market economy, Mises leaves his sectarian Utopia and joins the rest of us in choosing among imperfect but possible alternatives in the real world.

10. The book is too short in its omissions, too long in its repetitions. On the latter, the readers of the book will have to judge for themselves.

11. The fact that Locke used the term "uneasiness" makes it, to Rothbard, the traditional translation of the German word *"Unbefriedigtsein."* Locke defined "uneasiness" to contrast with "satisfaction."[3] In this sense it is today more than "traditional": it is archaic.[4] Uneasiness, in modern usage, implies an anxiety that conditions are going to become worse; *Unbefriedigtsein* in Mises' as well as general usage implies a desire to make them better.

GEORGE J. SCHULLER

[3] Essay of *Human Understanding,* Bk. 2, Chap. 21, §29.

[4] *Webster's New International Dictionary,* 1944, p. 2772: "uneasy," 6 c.

Consumption Taxes and Income Determination: Comment

In a recent article in this *Review*,[1] Professor E. Cary Brown has clearly demonstrated that there are differences in the anti-inflationary effects per dollar yield of an income tax and a consumption tax, differences which exist even if it is assumed that all consumer units have the same marginal propensity to consume. He concludes that, under conditions of what he terms a consumers' "money illusion" (money consumption expenditure dependent upon money disposable income), a dollar of consumption taxes will reduce real consumption by more than will a dollar of income taxes, while, under an assumed "real" consumption function (real consumption dependent upon real disposable income), similar results hold provided equilibrium savings are positive.[2]

Alternative postulates regarding the linear consumption function, however, will yield different results. In particular, if it is assumed that *real* consumption depends upon *money* disposable income,[3] the resulting conclusions are directly contrary to the above: the anti-inflationary effects of consumption taxes are less than those of income taxes.

The imposition of a proportional consumption tax, with the base being consumer expenditure before the inclusion of the tax in price, raises prices by the amount of the tax but leaves money disposable income unchanged. If it is assumed that real consumption depends upon *money* disposable income, there will be an attempt to maintain real consumption by the expenditure of a dollar sum now increased at any money income level by the amount of the tax. The increase in money consumption is as great as the tax-induced price rise, with savings decreasing and real consumption maintained.

A proportional income tax, on the other hand, which lowers both money and real income directly, rather than leaving money disposable income unchanged and decreasing real income via price rises, does aid in reducing real consumption. With real consumption a function of money disposable income, real and money consumption decrease to a level consistent with the reduced level of money disposable income. It can thus be concluded that, under the above-mentioned assumptions regarding the consumption function, an income

[1] E. Cary Brown, "Analysis of Consumption Taxes in Terms of the Theory of Income Determination," *Am. Econ. Rev.*, Vol. XL, No. 1 (March, 1950), pp. 74-89.

[2] *Ibid.*, p. 87. The qualifications Professor Brown makes, as well as the simplifications (a closed economy, no corporate saving, etc.), also apply in this paper.

[3] A fourth logical possibility also comes to mind: money consumption expenditure dependent upon real disposable income. In this case an increase in prices without an accompanying increase in money personal income, as would take place were consumption taxes imposed and shifted entirely to the consumer, would mean a fall in real income and a consequent downward adjustment of money consumption expenditure at each level of money personal income. And, since prices have risen, *real* consumption would be cut even lower. This case is by far the most favorable for a consumption tax. It is, however, highly unrealistic. It implies that when real income falls due to price rises, consumers spend less money on consumption, at any given level of money income, adjusting their money spending to their real income. Although this case might have some applicability to those individuals attempting to maintain a rate of real savings, it seems unlikely as a description of aggregate behavior.

tax is more anti-inflationary than a consumption tax. The latter, in fact, is useless as long as the posited conditions continue.

How likely is it that such results will occur? Or, more basic, how likely is it that real consumption is more a function of money income than of real income? In so far as such phenomena as money illusions exist, such a postulate is certainly within the realm of probability. In a sense, this case is better termed the money illusion consumption function than that in which money consumption depends upon money income. The latter is a complete money complex; everything is in money terms. But a money *illusion* essentially involves a failure to grasp changing relationships between the real and monetary spheres. If it can be assumed that basically people do try to adjust their real consumption to their real income, but that they at times interpret their money income as being much the same thing as their real income, especially in short-run situations, then the aforementioned results are plausible. With prices rising and money income constant, real income falls. But people customarily associate a

TABLE I.—CURRENT DOLLAR AND REAL INCOME AND CONSUMPTION, QUARTERLY, 1946–1947

Period-Year and Quarter	Disposable Personal Income	Personal Consumption Expenditure	Consumers' Price Index (1935–39=100)	Real Disposable Personal Income	Real Consumption Expenditure
1946					
1	152.5	137.2	129.9	117.4	105.6
2	156.4	142.3	132.0	118.5	107.8
3	162.1	152.0	143.7	112.8	105.8
4	164.6	156.1	151.4	108.7	103.1
1947					
1	165.4	159.5	154.3	107.2	103.4
2	164.2	163.9	156.4	105.0	104.8
3	171.7	167.6	160.8	106.8	104.2
4	176.5	171.3	165.2	106.8	103.7

Source: The first two columns are seasonally adjusted quarterly totals at annual rates, in current dollars, from *Survey of Current Business*, July, 1950, pp. 30–31. The Consumer's Price Index is a quarterly average of the BLS index.

certain level of *money* income with a particular standard of living, especially after a period of price stability. As a result there will be a strong tendency to consume as much as previously in real terms, even though real income is lower. Savings are drawn upon and consumer credit rises.[4]

Data regarding the pattern of much of the first half of the immediate post-war American inflation, while not conclusive, is suggestive of the actual short run importance of the above. As Table I indicates, from the second quarter

[4] Such à view fits in with the ideas of Modigliani and Duesenberry regarding the influence of past standards of living. The very process of inflation, in fact, can be looked upon as a competitive attempt to maintain standards of living in the face of price induced declines in real income. *Cf.* Franklyn D. Holzman, "Income Determination in Open Inflation," *Rev. Econ. Stat.*, Vol. XXXII, No. 2 (May, 1950), pp. 150-51, and Arthur Smithies, "Behavior of Money National Income Under Inflationary Conditions," *Quart. Jour. Econ.*, Vol. LVII (November, 1942), pp. 113-28.

of 1946 through the second quarter of 1947, real disposable income continuously fell, *i.e.*, prices rose faster than money disposable income. During two of these four quarters real consumption increased; if the third quarter of 1946 is compared with the first quarter of that year, real consumption increased in three of the four quarters in which real income fell. In the words of Robert V. Rosa, "Willingness to follow rising prices, in attempting to preserve accustomed real consumption, has been extremely significant in the shifts which occurred during 1947."[5]

Such a reaction to price rises involves decreasing rates of saving, the using up of accumulated liquid assets, and growing consumer indebtedness. Thus it can hardly continue for too long a time. Consumer credit controls would be one step toward curbing this tendency. Another would be to differentiate between types of consumption taxes. A spendings tax can be made highly progressive more easily than can a sales tax, a feature which will make the cost of sacrificing savings increasingly greater.[6]

LAWRENCE S. RITTER*

[5] "Use of the Consumption Function in Short Run Forecasting," *Rev. Econ. Stat.*, Vol. XXX, No. 2 (May, 1948), p. 101.

[6] *Cf.* also the proposal of James Tobin, "Taxes, Saving and Inflation," *Am. Econ. Rev.*, Vol. XXXIX, No. 6 (December, 1949), pp. 1223-32, which would require a certain amount of compulsory saving or the deprivation of income by what amounts to an income tax.

* The author, instructor in economics at Michigan State College, is indebted to Jacob Schmookler for helpful suggestions.

BOOK REVIEWS

Economic Theory; General Economics

The Sociology of Georg Simmel. Translated with an Introduction by KURT H. WOLFF. (Glencoe: The Free Press. 1950. Pp. lxiv, 445. $5.50.)

Georg Simmel should be better known to economists. His analysis and insights throw light on many dark areas of economics. Moreover, he concerned himself with social processes which could enlarge and reorient a considerable amount of economic thinking—or what passes for it.

Simmel's influence in sociology, through the help of Albion W. Small, Park and Burgess, and Nicholas J. Spykman, has been quite large and there is a rather extensive literature on him. Still, until the appearance of Professor Wolff's translation, only a small and scattered part of his writing was available in English. His major works in philosophy and ethics—and a great one in economics—have yet to be translated. We should be particularly grateful for Professor Wolff's smooth and scholarly rendition of two of Simmel's major sociological treatises: Simmel's last comprehensive statement in sociology, *Grundfragen der Soziologie (Individuum und Gesellschaft)* (1917), is given in a complete form. And Professor Wolff has translated a significant portion of his principal work in sociology, *Soziologie, Untersuchungen über die Formen der Vergesellschaftung* (1908). The volume also contains Simmel's famous essays, *The Stranger* and *The Metropolis and Mental Life.*

Professor Wolff has prefaced his translation with an introduction appraising Simmel's contributions and providing a carefully annotated bibliography of Simmel's works, the translations into English and the literature on Simmel. To this reviewer, reading Simmel from an economist's viewpoint, it seems that the introduction would have been better had it stressed less Simmel's contributions to sociology and more, his specific insights into sociological processes.

The most familiar aspect of Simmel's sociology is his effort to establish what he called "formal" sociology, *i.e.,* to discover "societal forms," *e.g.,* superiority and subordination, competition, division of labor, formation of parties, representation, etc. He tried to distinguish these from "general" and from "philosophical" sociology, but these distinctions, as Professor Wolff indicates, places his analysis on "insecure foundations." Simmel's concern with methodology and philosophical aspects of sociology are less important and certainly less stimulating than his analysis of certain aspects of social life. It is best to read him, not as an organic and systematic treatment of sociology but as a provocative and creative analysis of man and society. The economist will find in him discussions of many familiar economic prob-

lems, approached in significantly new ways. And many factors not now considered in conventional analysis will demand attention after reading Simmel.

One may cite a few examples. Simmel's discussion of the individual and society, the individual and freedom, and freedom and socialism, all of which may be found in other places, nonetheless form an incisive summary which cuts deep into the naive and loose assumptions of individualism and society which underlie most economic analysis.

In economics, there has been an unbelievable absence of the concept of "group" (except bad-boy monopolists and short-run hysterias). Simmel has much to offer in his chapters on the Quantitative Aspects of the Group. His discussion of the "dyad" (union of two) suggests many aspects of duopoly hardly noted in the usual analysis. And the Triad, as Simmel presented it, illuminates not only oligopoly but also the sociological significance of the "third element" in labor arbitration and the divide-and-rule techniques in labor-management relations.

A keen section on the Tertius Gaudens (the third party who gains from the quarrel of two others) is a most revealing analysis of the consumer's gains from competition.

For the economist concerned with modern group enterprise, perhaps the greatest stimulation will come from Simmel's profound contributions on Superordination and Subordination. He gave minute study to all aspects of domination and submission. Every sentence opens new vistas on our group organization of economic life. These should stimulate investigation into every positional relationship involved in the productive unit, in labor-management coordination, in labor union organization, etc. For example, this sentence: "Even the abstract will-to-dominate, therefore, is a case of interaction." And much subtle, sardonic wisdom resides in his comments on Coordination and Reciprocal Super-Subordination—the domination in some phases of behavior and submission in others. "Probably," Simmel observes, "What is called the 'equal rights' of man and wife in marriage—as a fact or as a pious wish—is actually to a large extent such an alternating superordination and subordination." I wonder what is marginal analysis's answer to the same problem!

Simmel constantly made use of his ideas on money as a sociological fact. These were part of an earlier work, *The Philosophy of Money,* a classic, still not translated. Simmel had a magnificent view of the intricate and obscured personal and societal effects of a money economy. He was concerned, not with money as a veil, but the veil of money which becomes an article of clothing and a vestment of the spirit, not a medium of exchange but an exchange of the spirit for the medium.

To appraise the value of Simmel's sociology for economists, one must consider the relation of the science of sociology to that of economics. Obviously, there will never be a day when a completed sociology can be integrated into a completed economics. It is likewise unlikely that segments of one or the other can be incorporated as units. But certain aspects of social behavior, which can be generally summarized, can be used to illuminate processes of specific behavior. Economics can become aware of definite social concepts which are not being used in the explanation of economic conduct. And for

this necessary advance, the astute, exploring mind of Georg Simmel, now more accessible in Professor Wolff's well-considered selection, can be a source of stimulation and direction.

MENO LOVENSTEIN

Ohio State University

La Méthode de l'Économie Politique. Second edition, revised. By BERTRAND NOGARO. (Paris: Librairie Générale de Droit et de Jurisprudence. 1950. Pp. 270.)

Most writers in the Anglo-Saxon tradition of political economy have seldom dealt in a systematic fashion with questions of methodology. Authors like J. N. Keynes, Robbins, and Cairnes have only incidentally discussed certain methodological aspects that have fitted in with their general area of interest. When the substantial and systematic work on this subject by such a well-known author as Professor Nogaro first appeared in 1939, it attracted generally favorable attention. This second edition should be even better received than the first, for, while the spirit and organization remain the same, it is easier to read, and many of the rather burdensome examples have been eliminated or abbreviated. Enough examples remain, however, to illustrate amply the author's conclusions. New material has been introduced, and in some respects Nogaro seems to adopt attitudes that do not clash so sharply with those that are generally accepted in the English-speaking world. Rewriting has contributed to clarity and understanding throughout the book.

In the preface to the first edition and again in the conclusions, he discusses, all too briefly if he wishes to persuade most economists, the reasons for studying methodology. A whole book could usefully be written on these reasons, for, judging by the literature, most economists believe with Pareto that "discussion of method is a pure waste of time." Yet, many a school that has not even an undergraduate course in methodology teaches that economics is not a fixed doctrine but rather a method of study. What method? Nogaro replies that since political economy is primarily one of the *"sciences d'observation,"* economists cannot neglect historical and statistical research. Only from a painstaking study of facts can they theorize. He recognizes the use that the work of econometricians can be in economic studies but is always a bit disdainful of purely deductive theories, which he considers to belong more to scholasticism than modern science.

In view of the range of topics discussed, it would be incorect to say that the book has a single theme; yet it has unity, brought about by the author's development of his conception of political economy as a "science of observation."

In résumé, Nogaro finds that, because we can never enunciate propositions of a general character (develop theory) without first studying facts, we must be concerned, as economists, with historical research and statistics. Theory and description are not opposed, but good theory is formulated from observation and most often from a study of history. History, of course, is to be understood in a broad sense as phenomena which are the product of human acts. An economist should state nothing that he is not able to demonstrate

and must always be concerned with accurate descriptions of reality. Theories must always correspond with the facts they are supposed to explain. The primary aim is to understand (*verstehen*), not, as in the physical sciences, to explain (*erklären*). Therefore we must attempt to establish relationships of cause and effect. The *"méthode d'observation"* attempts to explain each phenomenon by finding its antecedent and thus tends to establish causal relationships. The goal seems to be a theoretical schema that is valid without consideration of time and place (*allgemeingültig*), as well as one that can be verified by observation of the corresponding concrete cases.

Many of Nogaro's ideas are already quite generally accepted, but some, particularly those having to do with causal relationships, might be disputed. Objection could be made, based on recent developments in modern physics. In that field, we see a growing reluctance to work with causal relationships. Thinking in terms of probabilities and relativity seems to be more fruitful. The recent discovery of secular changes in that basic constant, the velocity of light, will probably give added impetus to the present trend. These developments may weaken Nogaro's conception of causality, but until advances made in physics are applied profitably in economics, his basic case deserves serious consideration.

Nogaro specifically denies any intention to revive the old historical-vs.-classical-school controversy. He does make an attempt to find what is useful in both of their methodologies. There is little doubt that he feels historical study has too often been neglected in favor of classical or deductive thinking. To redress the balance, he includes a section (Chapter IV) on the dangers of strictly deductive reasoning in economics. Among the arguments he puts forth are the following: there is a danger of proposing *a priori* to discover regularities or equilibrium—perhaps no such things exist; in the past, economists have made errors with respect to reality because, in order to be able to deduce, they have employed as few simple premises as possible—economic reality is not simple. In other words, by simplifying their premises they have systematically distorted the *données* upon which they base their conclusions. Even those who do not agree will find this discussion stimulating and provocative.

Compared with his earlier writings on mathematics, one finds, I think, a willingness to concede a greater area of applicability to this subject. The last two chapters, VI and VII, are devoted exclusively to consideration of the relationship of mathematics to economics; the one discusses mathematics as formal logic, and the other, mathematics as a means of investigation. In Chapter VI, he insists that functional relationships do not indicate enough about causality to make them of more than limited usefulness. He mentions stochastical schemes but only in a quotation. In Chapter VII, among other things, he discusses models and uses a simple, dynamic example concerned with the *marché du vin en France*. Econometric methods, according to the author, are very useful and complement his method nicely.

One who has read widely in the literature of political economy will undoubtedly find material that is covered elsewhere; yet it will be seen that this book goes beyond any other single work in its analysis and critical perspec-

tive. Although it is unlikely that everyone will agree with all of its conclusions, the book does raise basic questions which we are too prone to ignore. The work could be used as a text for courses in economic methodology; unfortunately, it does not have an index—a chronic French disease. It is a pity that it will probably not receive the wide audience it deserves, for most economists reared in the Anglo-Saxon tradition could benefit greatly from more understanding of the work of their continental colleagues.

PETER R. SENN

The Pennsylvania State College

The Income of Society: An Introduction to Economics. By ELIZABETH ELLIS HOYT. (New York: Ronald Press. 1950. Pp. xii, 753. $4.50.)

The Income of Society is a welcome addition to the growing body of elementary textbooks in the field of economics. To the instructor whose intent is to select the best text for his students, the very number of new textbooks in the field presents an embarrassing problem of consumer choice. This wealth of "introductions" reflects the rapid increase in general demand for college texts due to the secular increase in our student population; it reflects the great urgency felt by many writers to provide better education in economic principles for a democratic citizenry; it also reflects the great difficulties of translating the traditional body of economic theory into a meaningful "introduction" on a more elementary level.

The first section of Professor Hoyt's book, Creation of Income, deals with the problems of economic choice. It explains the basic concepts of margin and equilibrium in their application to the student's most precious resource, time (p. 25). The importance of these concepts is indicated for micro-economics as well as macro-economics (p. 29). Other chapters of this section describe the input factors and their combination under conditions of modern technology, discussing problems of business organization and the essentials of the "spirit of enterprise" (p. 147). A long chapter is devoted to wants because "wants are the forces on which income creation depends" (p. iii). This chapter deals with materials taken from "a no-man's land between anthropology and psychology, and between them both and economics" (p. 45), in an attempt to adopt, on the textbook level, the Gestalt or field-theory approach which is now the dominant trend in psychology. This approach appears well designed to give the student feel for the integration of the social sciences and an understanding of culture patterns within which economic decisions are made.

The second section of the book, Price, analyzes the pricing of market goods as well as the pricing of the input factors of production. It contains a brief discussion of competitive market price as well as price under monopoly. The distributive shares of productive agents are explained as prices determined in the factor market, though these chapters contain no marginal productivity theory of rent, interest and wages, to avoid "the confusion arising from the inappropriate application of marginal productivity to distribution" (p. 257). One chapter deals with the price of labor and, obviously, cannot escape the great difficulty of discussing such a complex problem within the brief compass

of ten pages. The fact that women usually receive lower wages than men, even for the same work, is explained as arising from a deep and partly unconscious social attitude which "has nothing whatever to do with the equilibrium price of labor" (p. 274). Yet, is not any equilibrium price shaped by partly unconscious social attitudes? Miss Hoyt appears to use here the term equilibrium in a sense of social justice, an implication of the term she carefully avoids in other parts of the book.

Monopolistic enterprise and the public's protection are discussed at length in the third section, The Modern Market. The first chapters of this section deal with the consumer's stake in monopoly. While this discussion rightly stresses the ubiquity of monopoly, the student cannot but get the impression that our own economy is distorted by monopoly to such an extent that the ideals of competitive resource allocation and free enterprise are of quite limited significance. It raises the question whether teachers of economics do not have the responsibility of emphasizing that, while imperfections are inherent in any market economy, there are wide differences in the degree of imperfection, and that free choice, while certainly influenced by monopolistic restrictions, by advertising, and by many other imperfections, still has in our economy a wider range than in most other historical or contemporary social settings. In emphasizing the dangers of monopoly, the writer's discussion of our agricultural programs and "what commodity pressure groups can do" (p. 564) deserves special credit.

This section also contains some chapters describing the institutions facilitating market transactions, such as money and credit, as well as disturbances in the market mechanism, such as the business cycle. The last four chapters of the section deal with international economics. In Miss Hoyt's words, "all economics is international in the sense that every choice ultimately reacts on every other and there are no final boundaries either of land or sea. International economics is treated as a division in itself simply because political self-consciousness, cultural differences, and emotional strains have set up more barriers among nations than exist within any single nation" (p. 428).

In the fourth section, Division and Use of Income, much more space than in most texts is given to income use. The first chapters of this section deal with the division of income and the problems of special groups, such as labor and farmers. Fiscal policy is treated as an aspect of redistributing income. The remainder of this section contains a detailed discussion of the economics of food, health, and housing, reflecting the interest of the author in problems of home economics. Some concluding chapters are concerned with standards of living and public policy for a national minimum.

Emphasis on use as the economic goal is brought to a head in the three chapters of the final section on Economic Progress. There are some wise remarks on the meaning of economic progress, defined as "a long-run net increase of human utilities by economic means" (p. 703). A chapter on measurements of economic progress informs the student of available indices and their limitations. The final chapter, on Economic Progress and Social Cooperation, contains some moving observations on the most pressing challenge of our

times: international cooperation to protect civilization. "There can safely be any amount of variety of tradition, culture, and experience so long as we have a sense of community underneath. The imagination that leads to enlargement of community is best appealed to through our common physiological needs and our common needs for dignity and self-respect. The means for meeting these needs come from our limited resources of time, energy, and wealth. The means are economic" (p. 737).

While the book is called *The Income of Society,* it is not a text applying modern income analysis. There are constant references to income as the ultimate economic objective—its creation, its division, and its use—but there is no effort to use social income accounting as a common framework for the different issues discussed in the several sections of the book. Even with elementary students, the analysis of individual price determination (micro-economics) could proceed with constant reference to national aggregates (macro-economics). Many of the recent texts have attempted such an integration to avoid the dangers that arise from discussing the economics of individual units and problems of the total economy without a common thread. While this reviewer regrets that Miss Hoyt has not found it advisable to use the modern income approach, it should be emphasized again that her book compensates with excellent chapters to arouse student interest, relating economic problems to broader issues of social policy. "Students are always interested in economics to the extent they can see it enters their own lives, but most of them need the help of a social setting to recognize what the boundaries of their lives may be" (p. iii). Professor Hoyt's book will give the student some perspective for this social setting.

WERNER HOCHWALD

Washington University

Elements of Economic Analysis. By ARCHIBALD M. MCISAAC. (New York: Prentice-Hall. 1950. Pp. vii, 240. $2.25.)

A severe tribulation awaits anyone who tries to find a text for a one-term course in introductory economics. McIsaac, in *Elements of Economic Analysis,* offers one that seems designed specifically for this type of course. It is frankly experimental, but not sufficiently unorthodox to alienate many instructors.

Part I deals with price analysis. Like Marshall, McIsaac first treats the subject of demand (Chapter I). Although the approach looks a trifle unusual, the substance of the chapter is substantially traditional. The same freshness of treatment and orthodoxy of substance characterizes the second chapter which deals with supply and cost of production. Chapters 3 and 4 tie the first two together with a discussion of price formation and price-production policy. A section on in-line-pricing, price-lining, mark-ups, and other administered prices, although not very extensive, is welcome. The final chapter of Part I is devoted to a discussion of price structures, levels, and trends.

What makes Part I unusual are some of the techniques, *e.g.,* the use of total cost and revenue functions instead of the usual marginal and average functions, and some of the topics covered, particularly in Chapters 3 and 4. It is difficult to see what has been gained by some of the innovations, for instance,

price radials, but others, such as break-even charts, are especially commendable. It is unfortunate that McIsaac, in choosing a break-even chart, made the unhappy choice he did. He uses the ordinary total cost and revenue functions. The reader is told that the break-even point is that point at which the total cost function cuts the total revenue function from above. This break-even chart actually adds nothing to traditional analysis, yet the student is given the impression that this is a fairly radical departure from it. The break-even chart is, nevertheless, a concept which the instructor can tell students is used by industry. And some will undoubtedly be relieved to be able to avoid the embarrassing question whether industry uses the marginal analysis. That should be a welcome change.

Part II emphasizes macro-economics, but also attempts to integrate it with micro-economics. In Chapter 6, which deals with profit expectations and incentives of enterprise, the dual rôle of the enterpriser as supplier of goods and demander of factors is clearly demonstrated. The connection between the decisions of enterprisers and the income of the nation can be seen. There is also considerable emphasis on the rôle of expectations in producers' decisions. Here McIsaac associates *ex ante* and *ex post* concepts with budgeting and accounting aspects of business enterprise. Profits are examined from many points of view, including the risk-taking, monopoly, and accounting aspects. The subject matter of Chapter 7 is definitely more aggregative. The first part covers the G.N.P., its associated concepts, and the distribution of the national income. The discussion is brief as is also the outline of the Keynesian model which completes the chapter. The attempted integration of micro- and macro-economics is found in Chapters 8 and 9. Unfortunately, this turns out to be a partial equilibrium analysis.

Part III deals primarily with investment. Chapter 10 discusses real investment and the usual problem of valuation of durable assets. The next three chapters cover the demand for funds and methods of financing (Chapter 11), the problems of financial investment and trading in securities (Chapter 12), and finally the sources of investment funds (Chapter 13). This last chapter includes an attempt to explain how saving is transformed into investment via the capital market. This attempt is commendable, but the chronic mixing of perspectives creates confusion. This discussion is so misleading that unless each word is weighed much more carefully than can be expected from a sophomore reader, the instructor is likely to find it even more difficult than usual to explain the equality of saving and investment.

The final chapter, entitled "Savings, Property Incomes, Investment, and Employment" rounds out the third part and the book as a whole. It is divided into two parts, the first of which deals with the traditional analysis of saving and investment and the second with the problem of chronic unemployment.

Elements of Economic Analysis has an organic unity which is refreshing. The regular texts usually necessitate jig-saw puzzle presentations of material for single-term courses. McIsaac has avoided that. Furthermore, the discussion has an air of reality about it so that the student feels that what is being examined has more relevance to the economy of the United States than to that

of Mars. In this book McIsaac has made a definite contribution to the teaching of the one-term introductory courses. As long as we have photo-flash exposures to economics with us, books of this type are more than welcome.

MORRIS MENDELSON

Pennsylvania State College

Elementary Economics. By LELAND J. GORDON. (New York: American Book Co. 1950. Pp. xxx, 563. $4.50.)

Professor Gordon has made a considerable departure from the usual approaches to elementary economics. He assumes that for students who are not already interested in economics, or who do not intend to become economics majors, the approach which will create the most interest and, which will therefore, be most effective in a one-year or shorter course is through the student's own concern with himself as a consumer. He starts out in Chapter I with "Your Role as a Consumer" and "Why Do You Want What You Do?" and then discusses "The Family as an Economic Unit." After this follow six chapters on "Satisfying Consumers' Demands for Food," through which, in connection with milk, we are introduced to the concept of the market, to competition and the various forms of imperfect competition. This discussion of food then leads us finally back to the production of raw materials. The last chapter in this section, entitled "Processors Buy Raw Materials from Foreign Suppliers" relates to goods other than food and discusses foreign exchange and trade barriers.

The next section in the book "Satisfying Consumers' Wants: Other Items in the Budget" deals with shelter, household operation, clothing, automobiles, health, recreation and education. There is somewhat less theory in this section than in the preceding, although the final chapter in it, "An Over-all View of the Pricing Process" has a "Pause for Clarification," followed by a discussion of the nature of value.

Following this section is a fourth on the services of government, banks and public utilities including railroads. In this section we are introduced to a consideration of the proper areas of private and public enterprise. Here comes also the discussion of taxation.

The fifth section of the book treats distribution under the head of "Sources of Consumer Income," Wages, Interest, Rent and Profits. The sixth and final section, "Consumer Economic Problems" (obviously some special problems, since the whole book deals with consumers' problems) treats of insecurity of income (business cycles), irregularity of real income (fluctuating value of the dollar) and, finally, inequality of incomes.

It will be seen that it would be hard to make a more thorough-going attempt to introduce economics from the point of view of the consumer, and Professor Gordon has brought ingenuity and a deep interest to his task. It is obvious that the treatment of economics would be much more appealing and much more significant to students in general if there were more of a consumer's point of view in it. Students who have "finished" economics often ask "what bearing does this have on us?" and seem amazed when it is

pointed out that both monopolistic competition and the influence of pressure groups in government, for example, were illustrated in the high price they paid that morning for a "fair-traded" fountain pen. No student who had studied Professor Gordon's book would make that mistake. Also it is undoubtedly true that economics would be more important to students and more useful to them in reaching an opinion on contemporary problems if it showed how various obstructions to competition are involved in providing them with such services as recreation and health. In discussing theory there is no reason that we should not illustrate it by the experiences we are having every day. Students would be better able to evaluate the importance of the models in theory they study if they have the limitations or qualifications of such models made clear in respect to some specific thing they pay for. It is quite possible that in the book as a whole Professor Gordon's emphasis on the individual's own interests is over-stressed in relation to the interests of society, but certainly Professor Gordon demonstrates clearly how a consumer's approach gives realism to economics in our personal lives.

The book poses for us, however, a critical question: has this dominance of a consumer's point of view done justice to the most important aspects of economics? In respect to that question, the weakest single spot in this book is the discussion of distribution as "Sources of Consumer Income." The basic trouble may be that the subject of distribution in economic literature is a confused one; perhaps the use of the word distribution was unfortunate in the first place, since it focusses attention on what is got, whereas equally fundamental is what is contributed. At all events, in economic literature distribution is in theory a part of value, relating to the production process; its actual treatment, however, is more or less descriptive, often not very closely related to any one thing. Professor Gordon tries hard to make it more vividly related to consumption. We cannot escape the fact, however, that the real source of consumers' incomes is not wages, interest, rent and profits, but production. Having faced the sources of incomes, if we do not then like the way the product is actually distributed, we are in a sounder position to make improvements: to confront the interferences there may be in the working of the system; to endeavor to provide means so that the production of those now producing little may be increased; or, finally, to say clearly, if we believe it, that some things, such as making minimum necessities more available to everyone, may be more important even than increasing the size of the total product.

Great emphasis on the importance of production and distribution in the past has tended to belittle consumption, but it need not do so, nor does a consumer's point of view need to minimize them; on the contrary, it is necessary to take full account of the dependence of consumption on production, and on the contribution of its factors, in order to do justice to consumption itself.

Elizabeth E. Hoyt

Iowa State College

The American Economic System. By FRANK D. NEWBURY. (New York: McGraw-Hill. 1950. Pp. xii, 558. $5.00.)

The author of this text, which is intended chiefly for non-economics majors in colleges and "other students outside the colleges," is a consulting economist and a fellow of the American Institute of Electrical Engineers. His purpose is to supply text material for a comprehensive course "covering the principles, institutions, structure, and operation of the American economic system." Apparently the author holds a deep conviction that most economics courses fail to give an accurate structural and operational picture of our present-day economy. This failure he attributes to the overemphasis upon orthodox "static theory," which includes the "theory of perfect competition and monopolistic competition," and to a failure to give students some grasp of the quantitative magnitude of various controlling forces and of *actual* cost and price relationships existing in the world of business.

Part I comprises two introductory chapters which picture the changes in the structure and size of the American economy over the past century and set forth the four basic requirements of a successful and durable economy: The necessity that it shall induce people to work, produce the things they want most in the desired quantities, permit workers to do the kinds of work they prefer, and distribute rewards in proportion to individual contributions. Part II reviews the "static" analysis which the author feels has laid the dead hand of orthodoxy upon the study of economics and has prevented students from attaining insight into the controlling forces operating in our "dynamic" system. The principles of a dynamic economy are set forth in Part III, and Part IV addresses itself to the problem of stabilizing economic activity in a dynamic system.

A reviewer well might quarrel with the author's critical portrayal of the "static" type of economic analysis. As the static equilibrium approach has (at least until recently) constituted the focal point of the usual course in economic principles, probably its textbook presentation, and undoubtedly its classroom presentation, has been far less mechanistic and unrealistic than this author appears to believe. In any event, the author indicates that the static equilibrium approach has led students to believe that very keen competition represents a desirable situation in our business world, whereas actually some measure of producers' control over markets is essential to create the incentive to expand production facilities and to develop new products, new machines, and new methods—the sources of progress in a dynamic economy. Orthodox theory has led students to believe that, with monopoly power, the producer, plagued by a rising average cost curve, tends to restrict production to expand profits, whereas actually in a dynamic economy featured by expanding capital investment and heavy overhead cost, manufacturers face average unit cost curves that are flat or decline gradually, thereby placing the point of maximum profit at maximum possible output.

In a dynamic system such as ours the author pictures the secret of continuous progress as contained in increasing capital investment per worker and increasing production per worker. If these continue to occur throughout

our economy, we can follow a secular path of economic betterment without concern about "secular stagnation" or the infirmities of a "mature" economy. A continuing flow of *investment* funds from private sources into private industry is the innermost secret of economic success for our society. Injection of *consumption* funds into the channels of trade for the purpose of expanding markets cannot have the same beneficent effect because basically such funds do not have the same potency in expanding productivity. The author pointedly warns against "excessively high tax rates," not so much because they directly reduce incentives, as because they create serious danger of loss of savings for capital formation. The responsibility of the federal government is not to supply investment funds but, rather, to follow those monetary and fiscal policies which encourage private investment.

While the author makes out a convincing case with respect to the basic sources of secular economic progress in our type of economic society, he is far from successful in coping with the problem of economic instability. He senses the fact that in this area government must assume responsibility for adopting monetary, fiscal and other policies which will create a climate conducive to private business decisions aggregating into a predominantly stabilizing force. As to what these policies should be, how we should go about formulating them in a setting of political democracy, and how private business decision-makers are to be enabled to forecast the vacillating policies of our federal government in a fundamentally insecure world situation, this book sadly but understandably fails to make an important contribution to economic literature.

The American Economic System is very well written and should be readily understood by upperclassmen in our colleges. There are thought-provoking chapters and portions of chapters. Probably it will not be considered a suitable course text by many teachers, although doubtless many profitably could have their students read selected chapters. Judged as a whole, the book's most serious defect is its failure to develop any fresh approach to the problem of economic stability in a "dynamic" economy which has an excellent record of secular progress.

WILLIAM N. LOUCKS

University of Pennsylvania

Economic Doctrines. By FRANK A. NEFF. (New York: McGraw-Hill. 1950. Pp. xii, 532. $4.50.)

When an author attempts to trace the development of economic thought in about five hundred pages, his first step must necessarily be to decide whether he wants to treat intensively the major proponents of each school of economic thought or whether he wants to present a cursory discussion of some of the main ideas of every noted economist. Professor Neff has chosen the latter course for his treatment of economic doctrines from ancient times to the turn of the twentieth century. His survey of contemporary economics could be classified neither as intensive nor as extensive, since it consists of only thirty pages and deals with only three economists, *i.e.*, Hobson, Veblen, and Keynes.

After a brief introduction, Professor Neff starts with a discussion of economic thought in ancient times; he then proceeds in the customary chronological order through the middle ages, to the Mercantilists, the Physiocrats, the Classical School, the "Nationalists," the Scientific Socialists, and the Austrian School. He concludes with a brief study of Neoclassicism, Welfare Economics, Institutional Economics, and Keynesianism. The last two chapters are dedicated to totalitarian ideologies (not usually included in a history of economic thought), and a summary. Strangely enough, this chronological sequence was once interrupted when Petty and North were discussed after the Physiocrats, though both died before Quesnay was born.

A biographical sketch of each economist precedes the investigation of his theories. These biographical sketches are very thorough, giving the interested student an excellent opportunity to evaluate each writer's philosophy in the light of his background, education, and training. The treatment that follows each biographical sketch is usually rather cursory. Such superficiality is to be expected as ninety economists are "thoroughly" covered, besides many others who are briefly mentioned. The few doctrines that are included under each economist are illustrated by unduly and unnecessarily long and frequent quotations.

The allocation of space appears highly arbitrary. Thirteen pages, for instance, are devoted to Cairnes and fourteen to Carey in spite of Professor Neff's statement that "many an argument of his [Carey's] bears the earmarks of a strained analogy and proof of his dilletantism" (p. 290), while John Bates Clark (who, by the way, was born in 1847 and not in 1874 as stated on page 390) was only considered worth one and a half pages; Walras, from whose *Eléments d'Économie Politique Pure* the "true concept of a mathematical school is customarily dated" (p. 353), one and a half; Lauderdale, one; and Schmoller, "the author of the most outstanding treatise of the historical school" (p. 360), one. Although the importance of such economists as Adam Smith and J. S. Mill cannot be denied by any economist, it seems unwarranted that thirty pages are dedicated to each of them, while Keynes rates only thirteen and Veblen, only six.

Professor Neff makes no attempt to conceal his enthusiastic agreement with classical economics. Smith's influence on the development of economic thought can hardly be overstressed but Professor Neff's statement does sound propagandistic: "As students of political science refer to MAGNA CARTA or the BILL OF RIGHTS, so students of economics turn to Smith's classic for authority and guidance" (p. 99). Not every student of the subject would agree with Professor Neff that Ricardo is "next to Smith the most celebrated among economists" (p. 158) and that the intellectual honesty of no man was ever "more searchingly explored than was Ricardo's in that, though one of the richest land owners of the time, he propounded a theory which implicated the landed class as a group with a paramount interest in retardation of the improvement in agriculture . . ." (p. 169). Professor Neff could not have forgotten that Ricardo, the defender of the interests of the rising industrial class, was closely connected with the stock exchange, that his father

was a stockbroker, and that he amassed his vast fortune on the stock exchange with the assistance of its leading members.

Professor Neff's ardor for classical ideology is carried into his discussion of Malthus, whose theory on population is not generally accepted today: "The general truths of the Malthusian theory in its statement of broad tendencies seem to stand unrefuted" (p. 149). Perhaps strangest of all is the statement that "Saint-Simon . . . was also an economic liberalist, *departing but little from the basic teaching of Smith . . .*" (p. 243, italics mine). While the *Dictionary of Modern Economics* takes the other extreme, classifying Saint-Simon as a "French Socialist,"[1] Whittaker comes probably closest to the truth when he states that Saint-Simon "cannot be regarded as strictly a socialist, though some of his theories have exercised great influence on socialist thought."[2] Hardly any follower of the classical school has been left out; even the German adherents Rau, Nebenius, von Hermann, and von Thünen have been included. But contemporary economic thought has been badly neglected. Such important economists as Mitchell, Commons, Tugwell, Fisher, and Cassel have only been mentioned, while Bernstein, Wicksell, Joan Robinson, J. M. Clark, Pigou, Hansen and Schumpeter have been disregarded completely.

Chapter XXXIII discusses briefly some of the aspects of economic control under totalitarian regimes but its title *Totalitarian Ideologies* is a misnomer. Its definition of communism is not in conformity with accepted nomenclature: "When strictly defined, communism suggests complete government control of both categories (producers' and consumers' goods) and uniformity of individual incomes" (p. 468).

Professor Neff seems to like unqualified and categorical statements. Is it actually beyond question that Machiavelli's *The Prince* "founded the modern science of politics" (p. 52), that "feudal organization was indispensable for the preservation of order and for public defense" (p. 40), that around 1800 "through the establishment of 'economic liberalism,' free competition had become universal" and, therefore, "interference with the organization of production and with relations between masters and men was unwarranted" (p. 231), and that "subsistence wages have never been common in America" (p. 372)?

In spite of its shortcomings, certain parts of this book may prove of value to the reader who has a previous knowledge of the subject. He will be particularly interested in the biographical sketches, the wealth of quotations, which familiarize him to some extent with individual styles, and the brief summaries of some little known economists. This reviewer cannot recommend this book for an undergraduate course in Development of Economic Thought.

HARRY SHAFFER

University of Alabama

[1] Horton, Ripley and Schnapper, *Dictionary of Modern Economics* (Washington, Public Affairs Press, 1948), p. 294.

[2] Edmund Whittaker, *A History of Economic Ideas* (New York, Longmans, Green, 1946), p. 210.

Readings in Economics. Edited by K. WILLIAM KAPP and LORIE L. KAPP. (New York: Barnes & Noble. 1949. Pp. vi, 441. $2.75.)

This short collection of readings has the ambitious aim of providing supplementary reading materials for courses dealing with the basic principles of economics and the evolution of economic thought. It would not be surprising if many instructors find the book to be satisfactory for neither type of course. The text is too elementary for advanced courses in the history of economic thought; also, it does not include materials that would be found useful in a basic principles course.

The readings fall into three major parts which deal with precapitalist, capitalist, and postcapitalist society. The great majority of the readings, however, cover topics relating to a capitalist or market economy. They consist of short excerpts from the writings of twenty-six authors on mercantilism, classical political economy, economic historicism, socialism, neoclassicism, and theories of economic instability. At best, the selections on so many topics can do little more than serve as introductions to significant areas of economic thought. Some of the materials in Part II on the capitalistic economy are of considerable interest, since they are not found in more conventional readings on the history of economic ideas. In addition, the editors provide their own translations of selections from the writings of Quesnay, von Thünen, and Schmoller.

While the inquiring layman will certainly find this collection of readings worth while, it is very doubtful if they will have a wide appeal for serious students of economic science. The readings are in many cases far too limited for the subjects to which they apply. It is difficult to find adequate space between any two covers for selections from economic literature which span the long period between St. Thomas Aquinas and the architects of the post-war planned British economy.

ALLAN G. GRUCHY

University of Maryland

Economic History; National Economies

Final Report of the United Nations Economic Survey Mission for the Middle East. Part I, *The Final Report and Appendices*. Part II, *The Technical Supplement*. (New York: Columbia Univ. Press. 1949. Pp. v, 103; vi, 74. $1.00; 80c.)

The primary reason for the inauguration of this survey was political and humanitarian, namely to find a solution for the refugee problem created in Palestine and the neighbouring countries as result and tragic aftermath of the Arab-Israeli War. But the contents of this document go beyond this immediate aim. It throws into the limelight some of the fundamental issues which inevitably face every attempt at reconstruction and development of Middle Eastern regions.

The main task of the Economic Survey Mission has been defined as (a) To

examine the economic situation in the countries affected by recent hostilities, and to make recommendations for an integrated programme of measures and development projects to overcome the economic dislocations created by the hostilities; (b) To facilitate the repatriation, resettlement and economic and social rehabilitation of the refugees and the payment of compensation pursuant to the provisions of paragraph eleven of the General Assembly's resolution of December 11, 1948, in order to reintegrate the refugees into the economic life of the area on a self-sustaining basis within a minimum period of time; (c) To promote economic conditions conducive to the maintenance of peace and stability in the area. The report of the Economic Survey Mission is divided into two volumes: Volume I contains the Final Report, the introductory chapters of which start with some pertinent remarks on the main factors dominating the economic and social scene in Middle Eastern countries. The explanation of the present obstacles to economic development leads to the central proposal of the mission to start for the time being with pilot demonstration projects. The conclusions of the mission contain the familiar references to the necessity of a rise in standards of living as a preliminary for peace and stability in the Middle East and emphasize "that the path to a higher standard of living for the population of the Middle East is a long one; that, through the efforts of Middle Eastern peoples and Governments themselves, a higher standard of living can only be achieved through the development of the natural resources of Middle Eastern countries which, to begin with, should be reflected in an improved and modernized agriculture, without which substantial industrial opportunity is denied them; that the obstacles to economic development leave few opportunities, if any, for the immediate prosecution of large-scale schemes or the fruitful application of large long-term credits for productive, self-liquidating developments."

The appendices to Volume I and the detailed agricultural and engineering sections of Volume II entitled "Technical Supplement" contain valuable information on the financial and agricultural conditions of the area and a list of development projects in the field of rural irrigation, power and transport reconstruction. The appendices describe also some individual projects for the utilization and processing of agricultural products and for the exploitation of mineral resources.

The two volumes abound in many apt remarks concerning the analysis of the existent conditions, among them the reference to the political difficulties, which for the time being prevent a regional development of river resources in Middle Eastern countries. The comments on prevailing mentality with respect to the financial "climate" should be carefully studied. Quite frequently it is forgotten that as long as interest can be obtained on private loans at exorbitant rates exceeding many times the rate of return to be anticipated from investments in public development schemes, internal financing will not be attractive. The negative effect of maldistribution of wealth and revenue on the realization of such projects is mentioned. "Except in Israel, the wealth of these countries, from which Governments derive little revenue, is

concentrated in the hands of relatively few individuals who show, at the moment, little disposition to lend their money for long-range economic projects yielding a relatively small return. Another deterrent to resident private investors is their apparent unwillingness to regard their Governments as stable and prudent custodians of public enterprise." A similar reasoning points to the inclination of local capitalists to invest their capital in gold rather than to conduct it into productive channels. The report quotes an estimate of gold hoarding of no less than 150 million dollars for Syria alone. This, incidentally, stands in some contradiction to the emphasis laid on the general state of poverty and scarcity of internal financial resources. It would have been desirable to hear the views of the Survey Mission as to the possibilities for making these considerable idle resources productive, a problem not limited to Middle Eastern countries but existing in most of the underdeveloped areas.

Though only one year has lapsed since the completion of the report, a number of observations make odd reading. That there was no progress in the resettlement of the refugees is certainly not the fault of the mission. But in respect of the wider issue of development, the attitude of the authors was too groping from the beginning. It is certainly justifiable to examine and emphasize the institutional obstacles to economic development in order to restrain naive and wishful thinking in a field where the danger of paying lip service to programs of betterment is imminent.

Yet whilst the central proposal of the Mission to start with pilot projects is important advice, the issue of development demands under present circumstances a more aggressive approach. One would have wished more drastic recommendations and a more outspoken treatment of the obstacles. Those who oppose reforms in oriental lands will be able to refer to a number of statements in the report in explaining away the possibilities for quick improvement. Other area reports, as for instance the Report of the Economic Survey Mission to the Philippines, point bluntly to the structure of vested interests when analyzing the reasons for the continued state of impoverishment and destitution. There is also a certain over-estimation of the conservative propensities of local populations. Speaking about the possible results of the introduction of time-saving machinery in the peasant's farm, the report comments as follows: "Speculation about what he might do with his leisure, if he had it, begs all sorts of controversial questions. Perhaps his children, or his children's children, will come to think differently about these things." The reviewer thinks that not only the children, or the children's children, of many farmers in Middle Eastern lands think differently about these things but also many peasants of the present day who have started to use tractors and all kinds of improved farm equipment.

The international approach to the problem of under-developed areas has considerably advanced in recent years. Since the authors of the report themselves confess that "the land and water of the Middle East, properly developed and used, can support greatly increased populations and at a higher standard of living than now prevails," we feel not entirely satisfied with the answers they have given. This final report can only serve as an "Interim Report" on

the way to a more committing and more courageous approach to the problems of Middle Eastern development.

ALFRED BONNÉ

Columbia University

The Economy of Latin America. By WENDELL C. GORDON. (New York: Columbia Univ. Press. 1950, Pp. 434, $5.50.)

Those who have taught courses in the economy of Latin America are painfully aware of the need for a textbook in the field. Professor Gordon has done a considerable service by bringing out this volume. He starts with two chapters which sketch in very rapid strokes the economic history of the region and the principal facts about the "population, income and allocation of productive effort," and then divides most of the remainder of his book into four parts with two or more chapters each on organization of production, the raising of capital, pricing and production control, and international trade.

A short concluding chapter is followed by forty-seven statistical tables which should provide the student with a good bird's eye view of the economy of the region. These are followed by a rather long and quite useful bibliography, probably of more use to the advanced scholar in the field than to the college student. It is stated in the introduction that the volume is intended for use by both groups.

Attention is concentrated on problems such as the raising of capital, public finance, banking, and balance of trade. There is also a worthwhile chapter on "economic imperialism," a subject upon which Professor Gordon, as the author of a study of the expropriation of foreign-owned property in Mexico,[1] is a recognized authority.

In connection with the raising of capital in Latin America, there is little or no discussion of the propensity of Latin Americans with money to invest to put their funds in land, and the changes now developing in this traditional pattern. The rôle of the government-sponsored development corporation in raising and investing capital funds is given only passing reference, though in countries such as Chile, Mexico, Venezuela and Peru it has played a very significant rôle.

There are some inaccuracies of discussion and analysis. Several instances of this can be pointed out in the chapter on "Labor and Social Security." In discussing the Mexican labor situation, Professor Gordon singles out the group who have led the Confederacion Regional Obrera Mexicana (CROM) labor federation (headed by Luis Morones) as "a group of self-seekers," and since he uses no such adjectives to describe Sr. Morones' successors, such as Lombardo Toledano and his friends, the implication is that the latter are not "self-seekers." Unfortunately, "self-seeking" seems to be a fairly prevalent characteristic of all Mexican labor leaders.

Again, Dr. Gordon indicates that the split in the Confederacion de Traba-

[1] Wendell C. Gordon, *The Expropriation of Foreign-Owned Property in Mexico* (Washington, Public Affairs Press, 1941), Chap. XII.

jadores de Mexico (CTM, the CROM's successor as the dominant Mexican labor group) which occurred in 1947 when Lombardo Toledano was ousted was the only important division in that organization. As a matter of fact, the CTM had been disintegrating since 1942 at least. In addition, Professor Gordon is entirely wrong in his estimate that Lombardo Toledano's successor to the CTM, the Alianza de Obreros y Campesinos de Mexico, was likely to become the principal labor group in the country.

In a wider labor field at least two of Professor Gordon's comments might be questioned. He says that the only labor federation in the continent which has been "dominated by avowed Communists" is the Cuban Confederacion de Trabajadores de Cuba (CTC). In this he is mistaken: important labor federations in Uruguay, Chile, Colombia, Costa Rica, Brazil, to name but a few, have been controlled by avowed Communists. The continent-wide Confederacion de Trabajadores de American Latina (CTAL) has since 1944 had a majority of avowed members of the Communist Party in its executive committee.

Finally, in discussing the Inter American Confederation of Workers (C.I.T.) which was organized in 1948 under A.F.L. sponsorship, Professor Gordon says that the groups which had formed the Pan American Federation of Labor in the 1920's were active in the C.I.T. This is not so, since the only group which belonged to both is the A.F.L. itself. The principal Latin American group in the P.A.F.L., the Mexican CROM, is strongly antagonistic to the C.I.T. and is indeed friendly to the Peronista labor movement. There is, incidentally, no mention of the part the Peronistas are playing in Inter-American labor relations.

In spite of these criticisms, this reviewer is convinced that Professor Gordon's pioneer text will be met with great relief and approval by teachers of Latin American economics. For the first time a general picture of the economy of Latin America has been brought together in one volume written in an easy and readable style.

ROBERT J. ALEXANDER

Rutgers University

Economic Systems; Planning and Reform; Cooperation

The Open Society and its Enemies. By KARL R. POPPER. (Princeton: Princeton University Press. 1950. Pp. xii, 732. $7.50.)

This book—originaly published in England in 1945—is essentially a philosophical plea for the democratic way of life and for piece-meal intervention, preceded by discussion and consent, as the only satisfactory method of social betterment.

". . . Our greatest troubles," says the author, "spring from something that is as admirable as it is dangerous . . . our impatience to better the lot of our fellows." This dangerous impatience finds expression in the philosophies of Plato and Marx. These systems assert that history follows a fixed law and inexorably proceeds toward a fixed destiny. They hold up before men's eyes a prophetic vision of an approaching earthly paradise, a millennium in which

an entirely new social system will sweep aside the one we now have. Then and only then will suffering end and justice at last come to pass. In these philosophies, therefore, there is no mood of toleration, no room for democratic compromise, no possibility for gradual amelioration by specific rational action. Instead, man is in the grip of ineluctable and irrational forces. His one opportunity for a responsible moral choice is to cooperate with the law of history itself, and so to hasten the climacteric.

General acceptance of this kind of thinking has fatal consequences for free or "open" societies. For these philosophies involve a betrayal of freedom itself. They teach that the democratic state is impotent in the redress of injustice and suffering, and they call for its destruction and the society that goes with it. In their urge to realize some abstract "good," they demand the total reconstruction of existing society according to some utopian blueprint. Invariably the ground plan for the new order is a "closed" tribal system where the value of men as morally responsible agents counts for naught. Personal liberties, creative spontaneity, free discussion and consent are completely and ruthlessly suppressed in blind devotion to a mythical collective interest. A secular Heaven is the promise; Hell on earth is the fulfillment.

There are genuinely evil implications in these philosophies. They demand exposure and rejection. Yet liberty is often difficult to appreciate, and at times its defense may sound pedestrian and banal, or even worse, it may be mistaken for a complete rationalization of the *status quo*. As Matteotti once remarked, freedom is like the air you breathe; you only become conscious of it when the rope is round your neck.

Popper sees Plato as a philosopher who viewed change as disintegration, intensely disliked individualism, and who sought a static closed society. To understand him, one must understand his entire philosophy, its sources and assumptions. Well before Plato's own time, the Ionian nature philosophers had found change characteristic of the world of sense experience, and had interpreted processes of change biologically. Each "thing" follows an orderly sequence of birth-growth-reproduction-decay, and finally death. "Nature" was the original stuff from which all things come (animate matter plus space) and the formative principles by which like begets like and each finite thing undergoes its orderly life-cycle. Building on this scheme, Plato developed his famous dualism between the timeless order of forms (classes) and their viable copies in the world of experience. In the *Timaeus* he suggested that the form is the "father" and space the "mother" of all generated copies of that class. Extending this organic analogy, Plato constructed a metaphysics that interpreted all change in the world as processes of growth and decay, under the law of nature. Most important, Plato conceived society to be a biological organism. In consequence, he interpreted the histories of human societies as controlled by a natural law of growth and decay.

Plato's youth paralleled the later years of the lengthy Peloponnesian wars, when change was adverse to Athenian democracy. He viewed these events as a natural process of organic decay in the Athenian social organism—a process whose origins he ascribed to the individualism of the Periclean Age. The central problem of his political speculations was the formulation of a scientific polity

—a set of principles for statecraft that would restore the social organism to health, by isolating the causes of decay which would have to be brought under political control. In his solution of the problem, each state was viewed as a living thing, belonging to its natural class. As such, it was born in the family, grew to maturity as a city-state under a kingship, and declined by successive stages through timocracy, oligarchy, democracy, and finally tyranny. This was its normal life-cycle. This actual state, however, was but a copy of the timeless ideal state, whose "nature" can only be known by rational inquiry. By a kind of dialectic or debate, one could determine the "essential nature" of this state: its origin, its proper purposes, and its general characteristics. Since this ideal state was "natural," it was also "best." The aim of scientific politics, then, was to rebuild Athenian society on the model of the ideal state, and so arrest the process of natural decay.

The reactionary quality of Plato's thought now becomes evident. For he found the cause of decay in the individualism of the rulers. Plato could only conceive of individualism as egoistic self-interest: it held no other possibilities for him, despite the creative greatness of the Periclean period. Individualism brought class war, which in turn incurred a series of revolutions, ending in tyranny. Significantly, Plato saw tyranny as a possible means to attain the ideal state, for a wise tyrant would have the power to reconstruct the whole of society according to Plato's ground-plan. More important, the plan made the interests of the state the supreme good, exalted the collective and sacrificed the citizen. It would be difficult to discover a more thoroughly totalitarian conception in the whole history of western thought.

Thus the scheme called for a rigid class structure, on the principle that natural inequalities among men fixed their caste status in place of their rights as citizens in a democracy. As means of control, the rulers were to use systematically applied force—including murder, imprisonment and exile. There were to be censorship and strict regulation of learning and the arts according to fixed political purposes. Justice was identified with the interests of this best possible state. In place of equality before the laws, there was a system of natural inequalities and a privileged class. In place of creative individualism, there was the absolute dominance of the collective interest of the state, as interpreted by its privileged rulers. The state was not an instrument for the protection and promotion of the liberties and legitimate interests of the citizens. Rather, the state was an end in itself. All this, of course, was necessary to achieve an abstract good, as defined by Plato himself.

From Plato, Popper proceeds through Aristotle and Hegel, and follows with an extensive consideration of Marx. Though he sees a close affinity between the systems of Plato and Marx, Popper fails to emphasize the recurrence of the organic analogy in Marx or its rôle in his conception of society and its natural course of change. Moreover, Popper believes that Marx, unlike Plato, really was on the side of freedom and the open society, though his teaching furnished a weapon of great power to the enemies of that society.

In common with Plato, Popper argues, Marx too believed that history moved according to a fixed law, and that the good society required a sweeping change in the social order. Like Plato's, Marx's teaching was pernicious

because it narrowed the scope of moral choices and discounted the value of reforms by pièce-meal democratic methods. The mode of economic production evolved according to an unchangeable course. Its inexorable advance meant increasing misery and increasingly bitter class conflict. The socialist millennium was not only inevitable in the end; it was the only alternative to existing society. To hasten this millennium, rational men had but one possibility: to promote class conflict until it ended in revolution, probably with violence. Any act was justified if it served the end.

The simplicity of this formula shows how Marxism is an attack upon free society. Marx left no room for the correction of injustices by democratic methods practiced within the framework of an existing liberal order. All that he could see was inevitable class war and an approaching Great Year when existing Society would be totally destroyed. Marx's failure, his real disservice to the cause of freedom, lay in his attempt to make historical prophecy the aim of the social sciences. To asssume that history followed a fixed law is to deny to men the possibility of making their own history on the basis of their own responsible acts. Human liberty and democracy become a façade for the realities of class domination. So they must be overthrown.

Popper believes that Marx was most successful in his descriptive analysis of *laissez-faire* capitalism. He was sound in his view of "exploitation" (undefined) and the reserve army of the unemployed in that system. But his vision was limited, for he saw no alternative to *laissez-faire* save the socialist revolution. Yet in Popper's view "democratic intervention"—collective bargaining, social legislation and counter-cyclical spending—have shown that there is an alternative. Failure to glimpse it led Marx into his dolorous and mistaken predictions regarding the general consequences of accumulation. Popper also finds Marx's value theory unessential to his view of the reserve army. His emphasis upon the economic factor in history was no more than a "valuable suggestion," while his class hypothesis was overstated though useful in the analysis of *laissez-faire.*

I have the following points to make regarding this book. First, Popper has made an impressive contribution to scholarship in bringing into the open, with ample documentation, the assumptions and weaknesses of these philosophical systems. He has undermined their elegant pretensions, and a careful reader can gain much from Popper's labors. Of equal merit is Popper's elaborate demonstration that these systems contribute to the irrational destructiveness of the times. Plato and Marx have strong appeal, for they seem to minister to the natural desire to do good for humanity. In the case of Marxism, the appeal is even stronger in our day, for Marx labelled his system "scientific." Popper explodes this notion, by showing how Marx merely reasserted the ancient tradition of prophecy.

Second, Popper has marred his exposition by repeated failure systematically to develop the argument. I found myself constantly distracted by his practice of interrupting the main analysis to make lengthy explorations of side issues. In some of these diversions, Popper found frequent opportunity to engage in extensive and unnecessary self-justification for having found that some of our intellectual gods have feet of clay. In addition and perhaps because he is a

philosopher, Popper has a faculty for making clear ideas obscure by excessive use of unfamiliar technical terms and neologisms. If the purpose is to reach a broad audience, these weaknesses in the exposition as a whole will seriously injure the market.

Third, the argument would have been immeasurably strengthened if Popper had found occasion to develop explicitly the hostile consequences of Marxism to open societies. After all, Marx may have intended to reach freedom by his peculiar route, but if so, his ideas have had strangely contradictory results in the derivative teaching and practice of Lenin and Stalin. The space Popper devotes to the sociologists of knowledge and to Toynbee might well have been used to develop this point. And a fertile comparison could easily have been drawn between Plato's closed state and the realties of the Soviet dictatorship after 1917. Here we have powerful evidence that Marxism in practice leads to the closed society, and so represents an incredibly dangerous idea today.

Fourth, Popper's conception of intelligent action within the open society is not too clear. He properly insists that the democratic state must "intervene," but he does not show in any concrete way what kinds of intervention are compatible with the survival of a liberal organization, and what kinds are not. Yet some forms of democratic intervention—if systematically pursued and cumulatively expanded—can end in the closed society Popper abhors. The author fails to make clear that an open society requires coordination by prices "in the main," and cannot be maintained even under democratic political forms if state coercion is largely to replace the price system, even if the coercion is to serve "good ends." Further, Popper places his faith in "intervention" itself. Surely there is more to the open society than this. Yet I find no recognition that it is the essence of liberal society to make available a broad domain for constructive private actions. An open society—if it is to be "open"—is primarily a civil society, and not a political society in which the state is the chief means of promoting ends.

Finally, Popper discusses economic issues in making his case, and here his judgments are open to question at some points. For example, he endorses some of the stale 19th century attacks on *laissez-faire,* and agrees with Marx that if "there is a free labour market, and a surplus population . . . then wages cannot rise above starvation wages." Hence Marx was "justified in predicting increasing misery under that system." Next he contends that Marx's correct prediction was set aside by the rise of interventionism. This means two things: one, that real incomes of wage workers in England had shown no improvement until the period of intervention had begun (1870?); the other, that the only way to raise real wages is through intervention, mainly state. Now it is one thing to say that real incomes were low before 1870, another to suggest they had never increased. More important, the notion that only intervention can raise real wages is entirely too narrow a conception of the capitalistic process. Even if correct in special cases, it suggests that the only way to raise real wages is to raise the money supply price of labor. A reversal of emphasis is badly needed. The capitalistic process works mainly through the side of demand for labor, achieving improvements in mass living standards by pulling up money wages relative to prices of wage-goods, while secondarily

reducing the prices of wage-goods. As Schumpeter untiringly contended, the rise of living standards after 1870 was due to the amazing performance of "the capitalist engine" itself, and not to interference with its markets. Popper is correct in recognizing the short-run relapses associated with the system, and in calling for methods of stabilization of the growth rate. His difficulty lies in a failure to see the process as a whole.

GEORGE H. HILDEBRAND

University of California, Los Angeles

The Vital Center. By ARTHUR M. SCHLESINGER, JR. (Boston: Houghton Mifflin. 1949. Pp. 8, 274. $3.00.)

This is a curiously schizoid volume uniting in about equal proportions brilliant and authoritative insight with confused and superficial cliché. Dr. Schlesinger, in fact, speaks with two voices. With one he gives a critical analysis of communism generally and Soviet Russia in particular. Here the analysis is clear, manly, and straightforward. The author has evidently battled his way to his conclusions and every line shows the evidence of hard thought. The dissection of communism occupies (though not consecutively) about half the book, and this reviewer thought it excellent.

But (as we are so often exhorted today) it is not to be *against* something, we must also be *for* something. And when Dr. Schlesinger speaks on specific positive proposals his voice undergoes a curious change. Though the style remains superficially as confident as ever, the state of mind of the author somehow indefinably affects the cadence of the prose. Schlesinger in these sections has thrown together a number of ideas not always well assorted and often clearly the result of hasty borrowing. The true ring of authentic *personal* conviction is lacking.

Economists in particular will be impressed by the thinness of the constructive analysis. Dr. Schlesinger comes nearest to giving a specific program in the last half of his eighth chapter, "The Revival of American Radicalism," and there he has taken over the idea that "Keynes not Marx is the prophet of the new radicalism." "The state . . . should create an environment favorable to private business policies which increase production; and let the free market carry the ball as far as it can." Few would object to this statement. But it would puzzle anyone to determine from the confused and contradictory pages which follow (pp. 183-85) whether Schlesinger is merely a moderate Keynesian of the compensatory finance, balanced-and-unbalanced budget variety like this reviewer, or an advocate of the Beveridge heavily centralized, over-all planning scheme, or a gradualist of the socialist, government-ownership-of-heavy-industry type.

Perhaps it is unfair to ask of an historian that he supply us with an economic and political blueprint. But Dr. Schlesinger has voluntarily undertaken the task of charting a general policy for democratic action. Furthermore (to his honor), his book is replete with indications that a merely political analysis of the roots of freedom is not enough (just as an economic analysis is not enough). There is an old proverb that he who says A must say B, and I feel that Schlesinger's own *political* analysis puts him clearly under an

obligation to analyze his economic program every bit as carefully, as personally, and as bravely as he analyzes communism. This, unfortunately, he fails to do and the book is correspondingly weakened.

But let us cut through detail and ask what it is which fundamentally prevents Schlesinger from evolving any coherent positive policy. He grants that excessive centralism will tend to undermine freedom of thought and effective democracy. He grants the need for growth and for some large units (though he is clearly haunted by distributivist and guild socialist echoes). He grants that the "organization" can take on a life and interests of its own, separate from those of its rank and file, and sometimes adverse to them. He grants that labor unions can act restrictively and oppose change and opportunity. Yet somehow the cumulative effect of all these concessions—which, I submit, should lead him toward the sort of liberal capitalism sketched in the reviewer's *Democracy and Progress,* is never quite followed through. What is the trouble?

This reviewer has often considered writing an article to be entitled "Jefferson, Hamilton, and Marx." My thesis would be that in the last analysis Marx and Hamilton have certain qualities in common as against Jefferson. For Marx and Hamilton—not necessarily explicitly or consciously—are to some extent sharers of the Platonic dream of the rule *downward* of the guardians, or the philosopher kings—in other words paternal oligarchy. The Leninist-Marxist emphasis upon the guardianship of the party, the Hamiltonian concept of government by the "responsible" men, right-wing or left-wing *noblesse oblige,* these ideas I submit have a certain basic common element.

But although Dr. Schlesinger is too keen and too many-sided to be neatly pigeon-holed he remains, I submit, essentially a Hamiltonian radical with a rather stronger dose of Marxian ideas than I believe he either realizes or exactly intends. And strongly influenced by the ideal of the philosopher-king, he simply cannot "take" the businessman. The only type of conservative that he can tolerate is the second- or third-generation rentier! And (though here I am probably over-stating) the type of corporation he seems to find it easiest to assimilate is the large-scale rationalized, routinized "responsible" vested interest!

Most remarkable of all, for a believer in democracy, is his frequent, almost rabid antipathy to the *new* rich, the parvenue, the very type whose existence a Jeffersonian would regard as one of the prime achievements of democracy. Desperately compressing the argument, there seem to me to be two basic weaknesses in Schlesinger's point of view. First of all, on the purely economic side, his preoccupation with the Marxian type of class struggle—*horizontal* conflicts between the "wealthy" and the "poor"—leads him almost entirely to omit the *vertical* group struggles of industry against industry, technique against technique and the inevitable psychic insecurities which they imply. Thus he never fully grasps the clash of progress and security—a clash which may be ameliorated but never removed.

The second basic weakness is the almost complete omission from his set

of ideas of *independent* opportunity. He would do much to give opportunity —health services, free education and so on. The poor boy who wanted to be a physicist might indeed get a better break in Schlesinger's world *at first.* But the poor boy who, having learned physics, then wishes to see some great *new* invention or scientific discovery *put into practice* will probably tell another story. For the flaccid, security-conscious, vocational pressure groups likely to emerge in the Beveridge-type world are not likely to permit of much real change or adventure. To paraphrase Schlesinger, they are likely to be bureaucratic in a "soft" way, "sedate, cautious, and feeble." Or could they merge into fascism?

This review must not be taken as a blanket indorsement of whatever type of man the market happens to throw up. I have on the contrary (pp. 87-88 of my *Democracy*) analyzed at some length the problems which the parvenue raises for the intellectual—space forbids repetition here. But, speaking briefly, I also cannot share Schlesinger's very heavy reliance on *noblesse oblige.* Can we get the *oblige* without re-creating the *noblesse*-responsibility without power? That, as I see it, is his basic problem.

This book contains a number of inconsistencies or errors. For example, on page 25, we are told that "aristocrats" are people whose position derives from "*land and status* rather than from stock holdings." But such "aristocrats" only exist in Boston, Philadelphia, New York, and Virginia. Is the Main Line, then, or Fifth Avenue divorced from the stock market?

The Whig party "bitterly fought the . . . regulation of wild-cat banking" (p. 17). One looks in vain for a mention of the fact that the Whigs were *organized* to protect the Bank of the United States. Wild-cat banking got its great impetus from Andrew Jackson!

Finally " 'The businessman dealing with a large political question' [Henry Cabot] Lodge [Sr.] could say with Bostonian and Hamiltonian disdain is really a painful sight!" (p. 21). I should say that the spectacle of Henry Cabot Lodge, Sr. confronted with the "large political question" of the League of Nations was about as painful a sight as most. And does the businessman show up so badly by comparison?

DAVID McCORD WRIGHT

University of Virginia

Movements for Economic Reform. By PHILIP TAFT. (New York: Rinehart. 1950. Pp. xiv, 614. $5.00.)

The bitter showdown of ideologies in our period centers around economic systems and their underlying philosophies. Professor Taft endeavors to offer a view of various movements for economic reform against their historical and cultural background. "Only by examining the customs, traditions, and history of a country can we account for its acceptance, rejection, or modification of a doctrine" (p. viii). This is a very commendable approach indeed; it is regrettable, therefore, that this intention is not applied more consistently throughout the book. The promise to "avoid, in considering programs of reform, the smugness of the logician who believes that proof of a logical con-

tradiction or inadequacy is fatal" (p. 2) is more successfully kept, but a cleancut distinction between individual ideas—no matter how important—and socio-economic movements is sometimes missing in presentation.

The author starts out with Plato, then makes a big jump to More, Campanella, Harrington, and Winstanley, whom he groups together as "the first Utopians." The following two chapters are concerned with the development of socialist ideas in the eighteenth and early nineteenth centuries. An account of Marxism and anarchism follows. From there on the bulk of the book (Chapters 8 to 24) is organized in national units. Each nation discussed receives one or more chapters in which its socio-economic movements are reviewed historically. This procedure is applied to Germany, Austria, France, England, Sweden, the United States, Russia, and Italy; for some reason the discussion of Belgian reformism and Spanish anarcho-syndicalism is placed in the Appendix. The last eight chapters deal with movements which do not quite fit into this pattern: Christian socialism, "reactionary socialism" (particularly in Germany), the various labor Internationals, economic planning, and cooperatives.

The organization of ideas and movements in national groups has certain advantages for teaching purposes, but it is likely to confuse some students and to obscure the general picture of a given period (especially the earlier ones, which are treated very briefly). The reader who follows the present layout of the book is offered an account of the New Deal in Chapter 18 only to be thrown back to the Russian Decembrists in the following chapter. Certain movements of international character and significance are thus chopped up into national sections. Especially is this true of fascism, which the author does not recognize as an international phenomenon at all; he treats Italian socialism and fascism in one chapter, while setting apart German National Socialism in a special—rather fragmentary—section toward the end of the book. The reason given is that "Italian fascism, unlike Nazism, must be regarded as an aborted offspring of socialism, because it was closely linked to syndicalism, which was itself part of the socialist current" (p. 402). Later it is asserted that "fascism was naked adventurism" (p. 414), though we are told elsewhere that Italian fascism, as distinguished from German National Socialism, "can be traced to Marxism" (p. 458). Marxism, on the other hand, is treated by the author with great care and critical understanding, and is certainly not interpreted by him as adventurism.

In this reviewer's judgment, the lack of an analytical and integrated treatment of fascism as a contemporary international phenomenon (with varying details according to the background of each nation affected) is one of the two major shortcomings of the book. The other one is its limitation to European movements and ideas, with the exception of two chapters on American radicalism and the New Deal, and a few paragraphs on communism in China and collective villages in Palestine. Indigenous movements for economic reform in such areas as Asia or Latin America are not even mentioned, though India and Mexico, for example, offer ample opportunity to study interesting currents. Such expansion of the discussion, it is true, could be achieved only at the cost of an increase in the length of the book, but it would seem to be important

in order to offer to the beginning student a more balanced account of intellectual developments in the world. It is surprising also that a book published in 1950 does not offer a more systematic discussion of postwar developments, particularly in the labor movement.

A number of inaccuracies of lesser importance could easily be eliminated. For example, William I was not German emperor at the time referred to on page 63; to call the Austrian *Christlichsoziale* Christian Socialists is certainly misleading; and the whole concept of reactionary socialism as used in Chapter 26 is very dubious. The publishers could make a contribution by eliminating in future editions the countless printing errors and, in particular, the constant misspelling of foreign-language names and titles.

These criticisms are not meant to minimize the considerable merits of the book. It has a much wider scope than many conventional books and courses on comparative economic systems, for it places the emphasis on movements and ideas while paying due attention to those older programs which have been translated into institutional reforms. The author is very anxious to do justice to every variety of reformer, and most of his judgments are fair and levelheaded. The book is very readable and its style is clear, though the reader is occasionally left in some initial doubt as to where the reporting of other people's ideas stops and where the author's own views begin. This applies, for example, to the chapter on economic planning, which otherwise is a valuable part of the book. It is debatable, of course, whether economic planning as such represents a "movement" and whether we should not distinguish carefully between the various possible types, roots, and approaches concerned.

Generally, the author seems to confine himself largely to reporting in the beginning of the book and to add an increasing amount of critical evaluation and personal opinion later on. His own sympathies in the current showdown of reform ideas are clearly with the reformist and gradualist kind of social-democratic movements such as the British and Swedish. He takes the revolutionary phraseology of the communist parties skillfully apart and analyzes interestingly the conversion of the original Marxian ideology into the power drive of a dictatorial government. He shows a fine understanding of the mental processes that induce some Westerners to seek peace and salvation in a blind belief in the Soviets; he might have added a discussion of that peculiar figure, the ex-communist, who is also becoming a kind of movement these days. The final chapter is perhaps more in the nature of a good magazine article than an analytical conclusion, but it offers some wise words which deserve attention. "If we are to retain faith in democracy and reasonable progress, doctrinaire revolutionism as well as doctrinaire reaction must be avoided. The thorough-going laissez-faire economist is a brother under the skin of the Marxian dogmatist, and both by their irrationality, unrealism, and stubbornness are the bellwethers of disaster" (p. 558).

Not only economics but sociology, psychology, and anthropology show growing interest today in the roots and effects of social reform movements. What are the comparative incentives in various economic systems and what is their relationship to the traditional assumptions of economic theory? What makes an individual a reformer, or a revolutionary? What economic, historical,

or cultural conditions increase the incidence of such malcontents sufficiently to result in a movement? Although the United States, like other countries, has a long history of reform ideas and movements, the long absence of ideological commitment in her major political parties and labor organizations has contributed to the widespread fear and suspicion toward any questioning of the socio-economic *status quo*. In presenting the long and fascinating story of economic reform movements, Professor Taft's book is welcome as a starting-point for an intelligent discussion among economists and others of the fundamental issues involved.

ALBERT LAUTERBACH

Sarah Lawrence College

Money and Banking; Short-Term Credit; Consumer Finance

History of the Bank of Ireland. By F. G. HALL. (Dublin: Hodges, Figgis & Co. Ltd. Oxford: Blackwell. 1949. Pp. viii, 429. 18*s*.)

The volume under review is a students' edition of Dr. Hall's *History of the Bank of Ireland 1783-1946.* The original edition was "a de-luxe volume issued by the Bank and, in addition to my history, it also contains chapters on the architecture of the Head Office building and other material of a non-economic nature."[1] The present volume is, however, a reprint of the historical part of the deluxe edition and contains all of the appendices of the latter. As a result, the book has an unusually fine format for an inexpensive volume.

As a matter of fact, Dr. Hall's study is much more comprehensive in scope than its title might indicate. It is really more of a history of the Irish banking and monetary system during the years in question. Inasmuch as the Bank of Ireland, for the major part of this period, occupied a position somewhat akin to that of the Bank of England, a detailed study of the institution necessarily includes a treatment of the Bank's relation to the private and joint stock banks, as well as to currency problems and relations with the Bank of England, thus broadening considerably the scope of the study.

Chapter I furnishes a background for the study, dealing with banking and currency conditions in Ireland before the establishment of the Bank of Ireland in 1783. Chapter II is concerned entirely with the early years of the Bank (to 1800), describing the establishing act, charter and by-laws, directors and staff, premises, commercial operations, and relations with the government. Chapters III-V, dealing with the period to 1845, are topical in nature, treating of Problems of the Currency, the Coming of Competition, and the Control of Credit. Chapters VI-VIII deal with chronological periods, the mid-Victorian (1845-1880), progress from 1880 to 1914, and the War (World War I) and its aftermath. A final chapter, entitled "Epilogue" treats, much more briefly, the period from the mid-'twenties to 1946. This is followed by thirteen appendices containing certain important correspondence and much statistical and factual information, as well as a bibliography.

[1] Quoted from a letter from Dr. Hall to the editor of the *American Economic Review*.

Although the Bank of Ireland held the government deposits and generally took responsibility for assisting other banks in time of stress, it was never given a complete monopoly of note issue, sharing the issue privilege with five other banks. Each of the six banks had an authorized issue, above which notes could be issued only when backed by specie. This arrangement was similar to the fiduciary issue of the Bank of England except for being shared by six banks instead of concentrated in one.

To the reviewer, the chapters (IV and VI) dealing with the coming of competition and the mid-Victorian period were of great interest, particularly in comparison with American banking development. The problems of small notes, private token issues (shinplasters), excessive note issues, etc., so familiar to students of American banking history, had their counterparts in Irish monetary and banking developments.

One outstanding case of fraudulent activity is also included in Irish banking history. This was concerned with the activities of one John Sadleir and the Tipperary Bank. To quote the author, "after his death, the entire story of Sadleir's frauds and forgeries came to light. He had used almost the entire funds of the Tipperary Bank in speculation in German coal mines and Californian gold ventures, and his personal overdraft amounted to £200,000. When this source of supply was exhausted under the cloak of his position as Chairman of the Royal Swedish Railway, he forged 20,000 share certificates and 12,000 obligations of that concern. These forgeries were estimated to have totalled £300,000, and, in addition, he was indebted to that company to the enormous extent of £346,000. It was found impossible to estimate the total amount involved in Sadleir's forgeries of title deeds. He had forged an enormous number of title deeds covering properties in Ireland. . . . He also issued false deeds respecting properties in Great Britain, America and the Continent, but the total extent of these forgeries never came to light" (p. 229).

Fortunately for the people of Ireland, the case of John Sadleir was an exception. Although losses were suffered as a result of banking difficulties, outright fraudulent activity on a large scale seems to have been confined pretty largely to the instance just described. The Bank of Ireland itself conducted its affairs with the utmost probity throughout its entire existence.

Since the establishment of Eire, the Bank of Ireland has served as government depository for both Eire and Northern Ireland. It, along with the other five banks previously noted, still has the issue privilege, but the newly established Central Bank of Ireland (1942) is to be the sole note-issuing power after 1956.

The Bank of Ireland has been of outstanding service to the people of Ireland for more than a century and a half. Under the circumstances, it would seem to the reviewer that it might well have been made the central bank instead of establishing a new central institution. Perhaps, however, in these days of government control of central banks, the Bank of Ireland would prefer the less trammeled rôle of a leading commercial institution.

FREDERICK A. BRADFORD

Lehigh University

Business Finance; Investments and Security Markets; Insurance

Modern Life Insurance. By Robert I. Mehr and Robert W. Osler. (New York: Macmillan. 1949. Pp. xiii, 769. $5.00.)

This textbook may be properly classified in the same group with those of Huebner, MacLean and Magee. As a fourth book in the list of those at the college level, it covers essentially the same topics as the other three but at a slightly different degree of difficulty. Together, they present the field as far as college textbooks for the first course in life insurance are concerned. The book under review is not designed to be technical, but rather to be descriptive and to whet the interest of both college students and underwriters in the field, or others who wish an introductory understanding of life insurance on a rather broad basis. This book is by no means as technical nor compact as the one by MacLean; nor is it as detailed in the sections relating to premium and reserve calculation as that by Huebner. Conversely, relatively greater attention is given to needs for life insurance for a variety of purposes.

The organization is logical and attractive in that the subjects likely to be of most interest to the reader are introduced first and then more general and in some cases less "practical" problems in life insurance are introduced later. Following the Introduction, there is a section of seven chapters on "The Product" which includes a discussion of life insurance and annuity contracts, legal features, and a description of both industrial and group, life and pension plans. The next section on "The Cost" includes a technical discussion of the selection of risks, the computation of rates, and a discussion of reserves and reserve systems, followed by financial management problems from the company point of view.

The section on "The Market" is concerned with individual, family, business, and estate needs for life insurance and the ways in which various types of contracts can be fitted together to meet these needs. This section is likely to be of considerable interest to the typical student and prospective agent, since it emphasizes family problems and methods of arriving at a solution. Several illustrations of estate tax planning are introduced in this section.

Part V, on Life Insurance Companies, is concerned with types of carriers and their differences, followed by a consideration of home office and field organization. The final section on "The Life Insurance Industry" contains some material that is more frequently found in introductory sections of textbooks, such as the size and scope of the industry and its historical development. The regulation of the life insurance industry and the social values of life insurance complete the presentation.

Throughout the text the vocabulary of the trade is used, including abbreviations that by custom are used as complete words. In addition, a glossary of life insurance terms is included.

Generally speaking, the book is well written and is very readable; hence, it is likely to be teachable. The approach is deliberately non-technical. Some of the more difficult and controversial points are either omitted entirely or treated lightly. Here and there are definitions that may be accepted for classroom discussion, but may be considered incomplete for more philosophical

treatment. For example, social insurance is differentiated from private insurance largely on the grounds of the compulsory nature of the former. Some people would insist on a more complete differentiation and would consider this one inadequate or at least incomplete.

E. A. GAUMNITZ

University of Wisconsin

Public Finance

Public Finance. By ORVAL BENNETT and ISAAC LIPPINCOTT. (Cincinnati: South-Western Publishing Co. 1949. Pp. x, 728. $4.25.)

This is one of a number of public finance texts that have appeared in recent years. Unlike most of the others, however, it appears to have been written in terms of a specific educational objective. It is rather definitely pitched to the undergraduate level of instruction, and, apparently, is intended to meet the particular needs of the student whose interest in the subject is non-professional and non-technical. The language of the book more nearly approaches that of an elementary economics text, and the subject matter is developed descriptively to a somewhat greater degree than is characteristic of this type of material.

According to the authors, "The subject matter of public finance has undergone such great changes in recent years that a new approach seems necessary." This is because "Vastly greater emphasis is being placed by government upon the economic effects of public expenditures and taxation as means of control." From the standpoint of developing the text material, it also means that the writers, who are both orthodox economists, have undertaken to graft elements of Keynesian economics onto an essentially traditional treatment of the subject matter. Such attempts at synthesis seldom succeed where integration is needed, although the results in the present instance are probably as successful as any that can be achieved under the circumstances.

The writers state that "Special emphasis has been placed upon general principles and upon the fiscal theory of the state, with less attention to mere detail and current data." By actual count, approximately 13 per cent of the page matter in this volume is devoted to statistical representation and teaching aids, with a substantial portion of the remainder in direct quotation, this frequently in small print. While this reviewer has no quarrel with those who seek to enrich their teaching materials with judiciously chosen statistical data, quotations from selected sources, and supplementary review and research questions and problems, he doubts the advisability of loading an undergraduate text with items that are too often dated or that do not necessarily reflect the views of current authorities. From this standpoint, the book would have been much more effective had it been more closely and directly written.

The authors recognize a possible danger which may shorten the useful life of any current text in a field as dynamic as modern public finance, but do not meet it, when they employ the device of drawing a line of demarcation between pre-1939 fiscal history and post-1939 developments. This procedure

is defended on the ground that the years immediately preceding 1939 ". . . represent the last normal periods of government finance before World War II," while "The budget periods from 1939 to 1947 were emergency years." Yet, the history of public finance has as much continuity as any other history, and to treat it otherwise is to do violence to its nature.

The text material has been organized on the theory that "The subject matter of public finance falls rather naturally into five great divisions." These are public expenditure, financial administration, public debt, the bases of taxation, and government income. Tax writers generally include the topics treated under bases of taxation as elements in the study of government income, in that they represent, for the most part, the non-administrative aspects of that theme.

The volume devotes somewhat more space to fiscal administration than is usually allotted to this factor, while public debt is likewise treated with a degree of completeness not common to books of this type. The treatment of taxation, however, is rather uneven. Although the space accorded major taxes on personal income and property is generous and the descriptive matter is competent, not all important aspects of either tax have been equally well developed. Social security taxation, rather inexplicably, is dealt with under the general heading of fiscal administration, while severance taxes and the taxation of natural resources are regarded as elements under the heading of administrative and non-tax revenues. In the light of its significant emergency rôle, excess profits taxation could well have been subjected to a somewhat more penetrating analysis than the authors have seen fit to give it. Consumption taxes, in spite of their countercyclical aspects, are likewise dealt with rather casually.

Although the authors state that they have taken advantage of ". . . the vast pool of information on state finance . . . ," they fail to make specific acknowledgment of their dependence upon such sources in more than a few instances. Moreover, they have confined their list of collateral readings for the student almost entirely to the more widely read textbooks in the field.

In summation, it may be said that, while this text has a number of defects, it treats the subject of public finance comprehensively and with considerable skill. It is fairly well balanced and should meet the needs of students who are more interested in obtaining a general knowledge of the field than they are in the niceties of professional treatment. The book is particularly adapted for use in institutions with limited library facilities where instructors are frequently unspecialized in public finance.

RALPH B. TOWER

West Virginia University

International Economics

The International Economy. By P. T. ELLSWORTH. (New York: Macmillan. Pp. xx, 922. $5.50.)

Professor Ellsworth's principal objection to most textbooks in the field of

international economics (including his own *International Economics,* published in 1938) is that they do not devote enough attention to the historical development of the world economy. As a result, he argues, students whose reading in this field is confined primarily to these books do not acquire an adequate understanding of either current international economic problems or the relevant economic theories.

In *The International Economy* Ellsworth shows how the international economic problems of each era, beginning with the age of mercantilism, furnished the stimuli for the development of economic theory. This he accomplishes primarily by alternate doses of theory and history. Accordingly, he begins with four chapters that are an account of the world economy from "mercantilism to laissez-faire." Next come four chapters on what Ellsworth calls the "problem of trade." Part III contains a discussion of the international gold standard and the balance of payments together with some analyses of economic conditions and institutions in Great Britain in the early 1800's. Part IV consists of six chapters on world economic developments between 1870 and 1939—the theme being the decline and collapse of the world economy. This is followed by a section titled "The Theory and Practice of a Disorganized Trading System" which includes the theory of exchange rates under inconvertible paper standards, bilateralism and other forms of foreign trade control. The problems of post-World War II reconstruction, international disequilibrium, economic development, the European Recovery Program, the International Monetary Fund, Bank, and Trade Organization are examined in the last eight chapters.

The historical material is well selected and skillfully presented. With great economy Ellsworth has sketched the features of world economic development pertinent to his treatment of theory. He has also succeeded in providing the necessary background for his discussion of postwar problems. His interesting analysis of the improvement of backward areas, for example, is indebted to his account of pertinent economic history. Though some will quarrel with Ellsworth's selection or interpretation of facts, I believe there will be general agreement that his historical analysis contributes to the understanding of both economic theory and current international economic problems.

The extensive attention to history, however, is not, as some might fear, at the expense of a sound treatment of theory. Important advances since 1938 have been combined with a carefully pruned and revised selection from the rigorous theory section in his *International Economics.*

For the most part, Ellsworth explains theory clearly. There are lapses, some minor but annoying, and others of greater importance, that mar an otherwise competent job. An example of the former is the omission of the second figure beyond the decimal point in his reproduction of one of Machlup's tables illustrating the effect of an autonomous increase in exports upon domestic income (p. 344). The result is that the table, as copied, does not balance out as it should. This will confuse the student. A proofreader's error below on the same page does not help matters. Here a minus instead

of a plus sign appears in the denominator of the multiplier formula. Another minor matter is his careless use of the terms "demand" and "supply." This leads him to say, for instance, "As a country becomes richer and as its more pressing needs for capital are met, supply tends to catch up with demand, and the rate of interest to fall" (p. 194).

At least one instance of a major expository slip should be noted. In his introduction to a discussion of changes in foreign exchange rates as a means of correcting a deficit in the balance of payments, Ellsworth says: "Changes in demand and supply in the case of a commodity result in a change in price, and this change in price brings adjustment to the altered conditions. With an increase in demand, price is raised; at the higher price, additional supplies are called forth, demand is restricted and demand and supply are brought into equilibrium at the new price. The new equilibrium will be stable (under competitive conditions) if one requirement is met: at any higher price, supply must exceed demand; at any lower price, demand must exceed supply[1]" (p. 555).

The unfortunate wording of the second sentence in the above quote will no doubt cause some readers to wonder how an increase in demand can lead to its own restriction. But the last sentence will probably be more bothersome. In the foreign exchange market, as Ellsworth shows, the supply curve may be negatively inclined. When this occurs, his stability condition is satisfied provided the supply curve cuts the demand curve from above. But, under certain assumptions of market behavior, this equilibrium is unstable in a downward but not upward direction. When, instead, the negatively inclined supply curve cuts the demand curve from below, Ellsworth's stability condition is violated. Here, however, the equilibrium may be regarded as unstable in an upward but not downward direction. A clear statement of his conception of price-quantity reactions in the foreign exchange market would have eliminated most of the misunderstandings that will arise.

Lapses such as those noted are rare. They stand out sharply because of the generally good quality of the exposition. And Ellsworth's clarity is not achieved by avoiding difficult matters. He discusses, for example, the use of offer and home-production ratio curves in the determination of the gains from trade, and J. J. Polak's analysis of balance of payments problems of debtor countries.

In sum, this book is a worthy successor to *International Economics*. It is thoroughly up-to-date. The selection of theoretical and institutional topics, though not as inclusive as some would wish, will nevertheless make this book useful to a wide variety of courses in international economics.

WYTZE GORTER

University of California, Los Angeles

Business Administration

Taxable and Business Income. By DAN THROOP SMITH and J. KEITH BUTTERS. Fiscal Policy Series, No. 2. (New York: National Bureau of Economic Research. 1949. Pp. xxvi, 342. $4.00.)

Effects of Taxation: Inventory Accounting and Policies. By J. KEITH BUTTERS, assisted by POWELL NILAND. (Boston: Harvard University, Graduate School of Business Administration. 1949. Pp. xvii, 330. $3.75.)

The central theme of both these volumes is the interrelation of tax law and business income and cost accounting. *Taxable and Business Income,* although broader in coverage since it covers the whole range of income reporting, confines itself generally to one important question: What are the differences between reported book profits and taxable income? *Inventory Accounting and Policies,* while dealing primarily with the much narrower issue of methods of inventory accounting discussed briefly in the former volume, is concerned with a much wider group of questions, ranging from an examination of the facts to the broad economic implications of different methods of inventory accounting. Thus, the two volumes are complementary and both make useful contributions to the literature. Both volumes are part of a series, the former, the second in the National Bureau's "Fiscal Policy Series," the latter, the first in a comprehensive series planned by Harvard University on the "Effects of Taxation." One minor point: although both volumes have overlapping authorship, there is a distinct difference in the writing. The former is written in the desiccated style so characteristic of much of the National Bureau's publications while the latter is marked by liveliness and readability.

Taxable and Business Income is divided into two parts: the first section is devoted to a description of the legal requirements in the calculation of taxable income and to a comparison with business customary practice (or practices). While no new ground is broken in this part, the reader is provided with a useful summary of the differences and similarities as of the time of publication. The study points out that the major conceptual divergences arise out of: (1) timing with respect to income and cost items; (2) the use of direct surplus charges and credits; and (3) legislative action to provide special treatment for certain types of income such as . . . "the extraordinarily generous discovery-value and percentage depletion allowance" (p. 21). In general, however, the similarities between the two are much greater than the differences. This is so because tax law has started from accepted accounting practice and has influenced it.

The second part breaks new ground. It deals with a measurement of the quantitative differences resulting from conceptual differences. Based on a study of three samples of corporations, covering the period 1929-1937, the following are the principal conclusions: (1) On the average, book profit and "statutory net income," *i.e.,* taxable income, did not differ greatly from the period under consideration. On an *unaudited* basis, "book profit typically tended to exceed statutory net income, but usually by less than 10 percent" (p. 167). However, after auditing, the differences tend to be wiped out for most industries. (2) This general conclusion does not hold for certain mining and public utility industries where "book profit typically exceeds statutory net income by a much wider margin—often 50 per cent or more. Differences in depletion and depreciation accounting were probably responsible for most of the exremely large divergences" (p. 167). (3) Size of company does not appear to be a

factor, nor does the business cycle. (4) Variations are much greater in any one year and for any one group.

The obvious limitation of this part of the study is the fact that it deals with prewar data. It would be useful to know whether the same conclusions hold under postwar conditions.

Inventory Accounting and Policies deals with the impact and significance of the changes in the tax law which since 1938 permitted business to use the last-in, first-out (Lifo) method of inventory accounting. The study contains two major groups of topics: the first group deals with the general economic aspects of the problems involved in inventory accounting; the second, with the narrower but also important technical aspects of different methods of inventory accounting. Under the first group are such important topics as: the extent of "inventory profits"; the considerations which affect the choice of Lifo; the spread in the use of Lifo since 1938; the economic implications of different methods of valuing inventories and their relation to the concept of profits.

In the second group are discussed the technical and legal problems involved in the use of the traditional lower-of-cost-or market method, or of Lifo; the special problems raised by the adaptation of Lifo to the so-called "retail method" used widely by department and specialty stores; the relation of normal-stock and inventory-reserve methods to Lifo; and, finally, the effect of Lifo on national income and aggregate profits data. In addition, there are useful appendixes on the use of Lifo by individual companies, and a comparison of the carry-back provisions and the wartime inventory-reserve proposal. In spite of the highly slippery and technical nature of the problems discussed, the whole is handled skillfully and clearly.

As of the end of 1947, the period covered by the data in the study, the estimate is made that between 13 and 17 per cent of total manufacturing inventories were on Lifo and about 9 per cent of total "general merchandise" inventories and about 2 per cent of retail inventories. It should be noted that not all of a firm's inventories would be on Lifo. The use of Lifo is especially important in the following industries: meat packing, textiles and apparel, leather, lumber, paper, petroleum, iron and steel, and nonferrous metals. Moreover, its use is mainly concentrated among large companies. It is also used, but to a lesser extent, by department stores, and manufacturers of chemicals, foods, and beverages. Surprising is the omission of any branches of wholesaling.

The spread in the use of Lifo has been, as the study points out, mainly actuated by the desire to reduce the tax burden—a consideration especially relevant in a period of rising prices. There is also the broader question of the impact of Lifo on the functioning of the economy. Many writers, including businessmen, have argued that the use of Lifo will act as a strong stabilizing factor, for it will, they contend, even out the fluctuations in profits and hence in investment policy. Moreover, the use of Lifo will give, they also state, a "truer" picture of the earnings of business since costs will be based on current costs, not past costs.

The study points out in connection with the effect of Lifo on the sta-

bility of the economy that ". . . the case for including or excluding inventory profits from income rests on the effect of these policies on (1) business and investor expectations and (2) the cash position of business" (p. 10). To the extent that Lifo evens out the fluctuations in profits over the business cycle, it reduces the amplitude of fluctuations in expectations. On the other hand, it increases the cash resources of business during an upswing by reducing the tax burden and reduces them in the downswing by increasing the tax burden. This latter factor will act perversely on investment policy since the major portion of investment funds comes from internal sources. The study seems to feel that on balance the cash factor is more important than the expectations factor but that an inventory policy which removes the "distorting effects of inventory profits and losses" (p. 11) is a wise one. The authors say: "While we recognize the importance of a counter-cyclical national fiscal policy, we believe such a policy can be better implemented by other means than relying on a concept of income which exaggerates the extremes of business and investor expectations and which causes profits data to be subject to easy misinterpretation by the public" (p. 11).

This analysis overlooks the major importance of the pricing policy of business. In fact, the study is weak on this whole point, thus detracting from its otherwise major virtues. Most of the discussion about Lifo considers only its effects on costs and ignores its effect on prices. The usual assumption is that selling prices are invariant with respect to the different methods of inventory accounting. But this is a dangerous assumption. While business pricing practices vary widely, what is significannt is that the available data indicate for manufacturing (and even more for major areas of retailing) that gross margins remain fairly stable. If this be true, a shift to Lifo will on the average raise prices even more during a period of rising prices, and *vice versa* during a period of falling prices. Thus, a shift to Lifo may increase the amplitude of fluctuations of prices which would not conduce to the stability of the economy. Some businessmen, as reported in the study, made the point that a shift to Lifo made selling prices more responsive to changes in costs.

Nor does it follow that a shift to Lifo will necessarily even out the profits of all business over a business cycle. If a business is already pricing on a replacement cost basis, a shift to Lifo lowers its profits in a period of rising prices and raises them in a period of falling prices. But if a business prices on the basis of first-in, first-out, a shift to Lifo with gross margins unchanged will increase the fluctuations in profits. Since gross margins for industry as a whole remain fairly stable throughout the business cycle, the net effect of a shift to Lifo might well be to increase the fluctuations in profits for business as a whole whatever else it does for individual businesses.

A similar criticism attaches to the measure of "inventory profits and losses" as used by the study. To measure the over-all size of inventory profits, the study uses the Department of Commerce's Inventory Valuation Adjustment. The study recognizes in a footnote (p. 3) two difficulties with this "common use of the phrase"; (1) there are other meanings to the term inventory profits and losses; and (2) "it may seem confusing to call an increase in inventory

values caused by rising costs an 'inventory profit'." Unfortunately, Commerce itself has frequently spoken of the IVA as a measure of "inventory profits and losses." What the IVA measures in effect is the *actual* change in the replacement costs of the physical inventory held at the beginning of the period. Now it can be shown that the IVA measures an "inventory profit" in the sense that it will disappear with no further change in costs if business does two things: (a) it prices on a replacement cost basis; and (b) it keeps inventory on a first-in, first-out basis, or some variant thereof. Only then does a shift to Lifo cause that part of the profit to disappear. Otherwise, profits may go up if a shift to Lifo occurs since prices may rise.

There has been much public discussion over the significance of the reported profits of business in view of the large postwar size of the IVA. Do they represent a true measure of the long-run profitability of business or should they be adjusted down by the amount of the IVA? Because Commerce, for statistical reasons, subtracts the IVA from book profits, it is contended that business should also to show its "true" position. But whether business is overstating its profitability depends, in my opinion, on its pricing policy. I would argue that reported book profits do generally show the "true" profitability of business. The discussion, however, gets confused with another issue, *viz.*, the availability of profits as a source of funds. Here the fact that inventories must be replaced at higher prices does reduce the availability of profits for purposes of capital expansion, dividends, and other purposes.

This review has devoted a large amount of space to a critical discussion of one aspect of this book. Except for this point, basic as it is, the book is an excellent discussion of the whole problem and contains much valuable information. One important point which the study makes is that the more Lifo is used, the less reliable the balance sheet becomes, since inventory values will not reflect today's prices but of some period back. To overcome this, companies should publish data on the replacement costs of inventories. A corollary point which is implicit in this discussion is that the use of sales-inventory ratios becomes meaningless where Lifo is used unless some similar adjustment is used.

BENJAMIN CAPLAN

Washington, D.C.

Distributive Trading—An Economic Analysis. By MARGARET HALL. (London: Hutchinson's University Library. New York: Longmans Green. 1950. Pp. vii, 203. $1.60.)

Like its sister publications, *The Distribution of Consumable Goods,*[1] *The Economics of Advertising,*[2] *The Shops of Britain,*[3] and *Retail Distribution,*[4] this book is a welcome addition to the growing list of marketing publications originating in England. The author demonstrates an admirable facility in

[1] Braithwaite and Dobbs (London, Routledge, 1932).

[2] F. P. Bishop (London, Robert Hale, 1944).

[3] H. Levy (London, Kegan Paul, 1947).

[4] H. Smith (London, Oxford University Press, 2nd ed., 1948).

applying economic theory to the distributive trades—wholesaling and retailing. Through frequent comparisons of American and English experience she focuses attention on significant points and enhances the interest of the reader. Students of marketing, and particularly those who are interested in exploring the close relationships between economic theory and marketing, will find the book a fertile source of information.

In the judgment of the author, the distributive trades have much to offer both the theoretical and the applied economist. To the former, they offer "a perfect laboratory for research into the analysis of imperfect competition and oligopoly" while to the latter they provide a "theatre of activity hitherto unoccupied, one in which the drama of events is outstanding and the opportunity of revolutionary improvement in the standard of national comfort is not excluded" (p. vii). But, the author believes, the condition of the distributive trades in the United Kingdom is such as to provide a challenge to everyone. Consequently, the "aim of this book is to provide the reader with the minimum theoretical apparatus and the maximum of available data to enable him to make his own decision on an issue which will become more and not less controversial, more and not less urgent as time goes on" (p. vii).

Let us examine the procedure followed by the author in her attempt to accomplish this objective. In an introductory or background chapter she deplores the lack of available statistical material in view of the high degree of government control of the economic life of the country. Since successful policy-making and planning necessitate knowing the facts and interpreting them correctly, operating under a "statistical blackout" is a difficult task indeed. But the lack of information upon which to base policy in Britain has not prevented policy from being made. "In default of any clear picture of what constitutes distribution and the complex of economic issues involved, the distributive trades . . . have become the residual legatee of a number of controls vitally affecting their interests but imposed for other purposes: such are consumer rationing and price control; licensing of the sale of food; [and] town planning . . ." (p. 15).

The critical issues with regard to distribution are: (1) At a time of acute labor shortage can Great Britain afford to employ over two and three-quarter million persons (16 per cent of the working population) in the distributive trades as it did before the war? (2) Is the country getting its money's worth from such an expenditure, *i.e.*, are the distributive trades efficient? Answers to these questions are sought through an investigation of the size and organization of the distributive trades, and of the money and real cost of the services they render.

In making this investigation, the author devotes attention to the following factors among others: the mounting costs of distribution; the structure and economics of the retail and wholesale trades; advertising; resale price maintenance and trade associations; and some problems of the war and postwar periods. Naturally, major emphasis is placed upon conditions and experiences in Great Britain; but data concerning distribution in the United States are included frequently. For, despite "obvious differences in economic conditions in

the two countries . . . these American data illustrate many of our own dilemmas" (p. 14).

The author's brief discussion of the economics of retail trade is interesting because of her belief that this subject has not been treated adequately in general works on economics. Her analysis centers on two basic types of problems the retailer faces in maximizing his profits: (1) How best to serve his existing customers at any time (by equating marginal cost with marginal revenue) and (2) how to increase his expenditures in expanding the number of his present customers (increasing good-will) up to the profitable limit. Recognizing the inadequacy of an analysis, which assumes a "normal state of trade," when controlled inflation prevails, the author adds a valuable note on "over-full employment."

The wholesaler's functions are reviewed and trade in industrial goods and farm produce are considered briefly. Certain findings from the Reports of the Board of Trade Working Parties bearing upon lack of information, the urgent need for early consideration of the distributive trades in view of their national importance, and the impediments to maximum *productive* efficiency are summarized and the need for joint action in marketing research is stressed. Discussing the tendency toward non-price competition, she points out that this "is an instance of the effect of economic necessity on individual action in imperfectly competitive and oligopolistic markets" and that "its uneconomic results can only be controlled by joint action by producers, distributors, and probably the government, designed to restrict excessive multiplicity of types and uneconomically small purchases" (p. 105). The difficulties of obtaining such joint action, however, are recognized.

Turning to a consideration of the question—How far should wholesaling be competitive?—the author points out that some of the defects of wholesaling can only be remedied by limitations on competition. The alternatives lie between controls imposed by the industry, those imposed by government, and public trading. Experiments with control in Britain have proved disappointing, in so far as cost reduction and improved efficiency of wholesale distribution are concerned.

Turning to advertising—"one of the forms of non-price competition which naturally results from conditions of oligopoly"—the author discusses the nature and size of expenditures, Marshall's "constructive" and "combative" advertising, substitution, the aims of manufacturers and middlemen in advertising, and whether or not advertising expenditures can be regulated in the public interest. On the latter point, the author believes that the advertiser himself is the best judge, subject only to the qualification that he requires information on consumer preferences and the availability of substitutes in order to make a sound decision. Again evidencing her "research mindedness," the author proposes that "market research should be conducted on an industry basis financed by a compulsory levy on all firms in the industry and made available to all members" (p. 140). This proposal, of course, is a highly debatable one.

The chapter "Resale Price Maintenance and Trade Association" deals chiefly with three elements: (1) the diseconomies of price competition; (2)

the economic advantages of price maintenance; and (3) activities of trade associations.

In discussing the diseconomies of price competition the author points out four main reasons why large-scale producers have turned away from price competition: (1) they found price reductions to be a double-edged competitive weapon—often leading to price wars; (2) they learned that progressive product differentiation reduced the effectiveness of price competition; (3) they were convinced that price stability was an aid in the accurate measurement of costs; and (4) they feared that reductions in traders' margins would impair the efficiency of their distributors. But elimination of price competition through resale price maintenance also raises important problems, some of which may be attributed to the means by which it is effected.

The author's conclusion on resale price maintenance is significant. "If [it] is contrary to the interests of consumers, tends to favor and keep alive inefficient distributors in the face of over-capacity of the industry as a whole, to discriminate against the introduction of new and more efficient techniques of distribution and to prevent the consumer from exercising a choice between more elaborate distributive services and lower prices, it follows that something should be done to arrest its spread" (p. 170).

The final chapter is devoted to a statement of some war and postwar problems, and to a general summary of the study as a whole. Wartime controls over distribution are emphasized. Rationing of consumers' goods, price control, conscription of labor, and proposals to concentrate retail trade are examined in some detail. The treatment has high historical value.

With respect to the author's conclusions, the following appear to be most important.

1. Efficient distribution techniques cannot be arrived at through the application of a simple formula such as operating costs. From the consumer's point of view four distinct aspects are involved: (a) Trader's operating margins provide evidence of efficiency but must be interpreted in the light of long and short-run causes, including the size factor. (b) There is a wide variation in the nature and extent of services rendered by different traders. (c) The character and utilization of the resources that would be freed if certain enterprises were stopped would have to be examined. (d) The difficulties of accurate social accounting would have to be met.

2. The discovery of long-term solutions must await the collection of census data but the time is ripe for the proscription by legislation of any business practices which impede the adoption of more efficient techniques and for the education of the public in the economics of distribution.

3. Certain measures, tending to limit rather than exaggerate the uneconomic forces which operate in an imperfectly competitive market, should be adopted without awaiting the completion of a census. (a) Consumers' information services should be established to assist consumers to compare the serviceability of different brands of the same commodity and the availability of substitute articles in the market. (b) All trade associations should be required to register with the appropriate government agency and report their activities. (c) Re-

search is necessary to provide greater information regarding consumers' preferences and the quantity and character of resources which should be freed by reducing the number of distributive outlets.

4. Unless the over-expansion of distributive facilities is reduced, the living standards of those engaged in distributive activities cannot be guarded.

The author expects that some advance in the elimination of undesirable "restraints of trade" may be made through the Monopolies and Restrictive Practices Act of 1948. Moreover, the adoption of the Full Employment Policy has helped to place Great Britain in a position that would emphasize the necessity of "a common agreement that the aim of control and social policy is the more economic allocation of resources and the highest standard of living for all."

The author's conclusions represent little that is new to the close student of marketing. Economic analysis can and does substantiate them. But the reviewer was impressed with the author's insistence upon the collection of relevant data upon which sound public policy toward the distributive trades might be based, and her belief that under existing conditions in Britain with its "over-full employment" there is inadequate justification for the continued employment of 16 per cent of the nation's working force in the distributive trades. Her arguments are persuasive and convincing.

DELBERT J. DUNCAN

Cornell University

Industrial Organization and Markets; Public Regulation of Business

Presidential Agency. By HERMAN MILES SOMERS. (Cambridge: Harvard University Press. 1950. Pp. xiii, 233. $4.50.)

This discussion of the President's problems of policy making, administration of policy, and organization for the implementation of policy is extremely important to current activities designed to implement not only the machinery made necessary by the Korean incident but also the activities which the 1946-1950 experience indicates are likely to be a continuing part of our national policy.

Somers describes the development of one presidential agency, OWMR, the Office of War Mobilization and Reconversion, to demonstrate the thesis "Examination readily reveals that the conditions which prompted the need for the Presidential assistance provided by OWM-OWMR did not originate with the war—although the war emphasized and influenced the character of the problem—nor did the end of war terminate such need" (p. 2). He concludes on page 223 with the statement "The OWM-OWMR experience is rich with practical lessons for the future. Out of the background of trial and error which preceded creation of the agency, out of its life history, its problems and methods, its successes and failures, there emerge some broad guiding principles which should be useful not only to some analogous agency in the event of

another holocaust, but also in the development of such a permanent institution as the proposed Office of Program Coordination."

The reviewer is torn between the desire to place this volume against the activities which have developed from the Korean incident and the necessity for according it the rôle which Somers obviously intended for it. The author was designing a building block for the structure of public administration. In its proper rôle it is a large, sturdy and well-designed piece of structural material. For the present emergency and the ones which are likely to follow on an almost year-to-year basis for the rest of our lives, it is a neat capsule of historical description and succinct analysis.

People participating in or interested in the problems of national mobilization should read this book. Before turning to the content of the volume itself, the reviewer feels called upon to introduce the only negative criticism which he has.

Somers inevitably was unable to read everything or to talk to everyone. As a result, there are some minor omissions of record, and there are some interpretations of events with which the reviewer would not completely agree. As to the omissions, a minor one is in the allocation of resources where Somers jumps in one step from priorities to the Controlled Materials Plan. In this he skips the intermediate efforts to revise the priority system and the first efforts at comprehensive allocation embodied in the Defense Supplies Rating Plan, and Production Requirements Plan and some of the related mechanisms (pp. 115-16). Since the questions of interpretation are highly personal, rather than engage in a detailed accounting, the reviewer wants only to say, to those who will read Somers' book as a guide to future implementing action, that the construction which he has placed on the events is only one of several possible interpretations and they should not view his judgments as final.

The major omission of *Presidential Agency* relates to a matter referred to by Somers on page 209: "As this is written, the National Security Resources Board and the National Security Council are being officially added to the Executive Office, although they have had Presidential staff functions from the time of their creation in 1947." Actually, the rôle assigned to these offices by the President has, to a large extent, given them the function which Somers urges on page 219, "It is proposed that there be added to the Executive Office of the President an Office of Program Coordination whose head would also be assistant to the President. The basic function of the program coordinator (a happier designation should probably be devised since the word 'coordinator' has too often been attached to a man without a job) would be to act for the President in the coordination of day-to-day program and policy operations of the executive branch, in contrast to fiscal management, administrative management, long-range economic planning, and military planning. All of these functions are closely related and must be apportioned among institutional units of the Executive Office, the whole of which should be considered and should act as a unified structure, which it does not today because of lack of organization."

One must read, therefore, Executive Order No. 10161, issued September 9, 1950, under which the President delegated certain of his functions under the

Defense Production Act of 1950, to determine the extent to which at least the cold war part of the program coordination job has been established and assigned to the NSRB and the NSC. Since this Order is amplified by a number of unpublished statements of understanding and informal agreements, it would be most helpful if all of this 1950 experience could be digested into *Presidential Agency*.

Although Somers has written to the question of organization and administration, his contribution may be even more valuable as a collection of the salient points of wartime industrial mobilization history. Not only has he selected his points of emphasis with sagacity, but also his presentation of the personalities and issues involved is exceptionally good.

In some 233 pages he has encompassed the major problems of economics and public administration which occurred during World War II. The introduction and eight chapters can be grouped into three major sections: I, the problems and organization before OWM; II, OWM-OWMR, the problems and the agencies with which it was concerned; and III, the continuing need for Program Coordination. Somers has prepared a most usable digest. In addition, he has injected into it appropriate reference to earlier historical events and has documented his book thoroughly with related work by other students of public administration. It is an important book and one given special timely significance by the events of the last year.

DAVID NOVICK

Santa Monica, California

Government and Business. By VERNON A. MUND. (New York: Harper. 1950. Pp. x, 649. $4.75.)

Professor Mund's new volume is definitely a textbook, replete with all the time-tested devices for aiding a student's memory and lightening a teacher's load. Besides the usual paraphernalia of previews, sideheads, summaries, pictures, "references for further reading," and the like, the chapter division conveniently cuts up the subject matter so as to provide two assignments per week for a full semester course.

As with the conventional textbook, too, the primary desideratum appears to be to "cover the ground." In fact the book's compass is broader than its title. A more exact description would be "Government and the American Economy." The first six chapters provide a liberal dose of the "orientation" now so fashionable in collegiate pedagogy. These sixty-seven pages, comprising a tenth of the volume, enlist anthropology, history, law, political science, psychology, sociology, and a few minor disciplines in a valiant attempt to construct an economic framework on a solid social foundation. It cannot be said that remarkable success attends the attempt. The disquisitions on the origins of government, private property, and markets, for example, follow the familiar lines developed several years ago by John Locke, Jean Jacques Rousseau, and Adam Smith.

The next seventeen chapters constitute a useful survey of the relations of "Government and Business" in the United States. These 400 pages cover

the subjects usually treated in college courses on public regulation of industry, or "Trade Regulation." However, it is difficult to detect traces of logical order in the arrangement; and for want of system, repetition abounds. Chapters 7 and 9 are devoted, respectively, to competitive and monopolistic price theory; sandwiched between them is a chapter on the growth of economic concentration through corporate consolidation. Chapters 10-14 review the legislative and judicial history of the Sherman Act and various acts granting exemption therefrom. A chapter on patents, their use and abuses, separates these five chapters from their logical sequel: a discussion of the Federal Trade Commission Act and the Clayton Act and their administrative and judicial application. Next, the basing point system gets two entire chapters (not to mention many briefer passages, *e.g.*, pp. 85-88; 206-8; and 304-5). These are followed by a chapter on S.E.C. jurisdiction and activities, after which the discussion of antitrust policy is resumed in three chapters on state legislation in this field.

The last section (not so marked off) consists of eight chapters treating a miscellany of subjects related more or less closely to antitrust policy. These include N.R.A., A.A.A., T.V.A., wartime price control, public utility rate regulation, N.L.R.B. policies, the social security program, and natural resources conservation.

The book as a whole is reasonably objective. But occasionally the author gives one a glimpse of his faith and indulges an evangelical bent. Thus, "In a free-enterprise economy, the satisfying of human desires, the production of *useful* goods, the practice of the *economic virtues* afford opportunities for profit" (p. 37; here, and hereinafter, the italics are the reviewer's, unless otherwise noted). Whether a qualifying clause appended to the third sentence following, but equally applicable to this statement, adequately serves its purpose, those familiar with student reading methods may judge. Again, "Competition . . . should be conducted according to good manners and good morals" (p. 642).

It should be added at once, however, that the "faith" is not *laissez faire*. It is the Wilsonian gospel of regulated competition. Far from embracing the nineteenth-century dogma, the author makes it out the root cause of most of the economic evils of the twentieth. And the "corporation lawyers" who advocated let-business-alone economics at the bar and enshrined it in their decisions on the bench constitute one of his two principal *bêtes noires* (*e.g.*, pp. 15, 16, and 150). The other consists of special-interest blocs, or pressure groups (pp. 27, 31, 212, 636, 638, and 643, *inter alia*). Popular education appears to be the author's main, if not sole, reliance for exorcising these two devils and giving a benign providence, disguised as competition, a chance to bestow its full bounty (pp. 30, 643, *et passim*).

A major shortcoming of the study is the neglect of definitions relating to certain vital aspects of the subject. Thus the statement (p. 14) that "Congress actually did very little in the way of exercising its regulatory power *prior to the advent of the New Deal in 1933*" might not appear so anomalous if the author were to explain that he was using "regulatory" in some special

sense. But such terms as intervention, control, regulation, direction, management, and manipulation are not defined or distinguished. Consequently, it is somewhat baffling to read that "It is the management which *directs* a corporation, and it is the management, therefore, which is responsible for what a corporation does" (p. 91; italics in original). Similarly, one is puzzled by a reference (p. 45) to "The *regulatory control* which Congress has come to *adopt*. . . . "

A related, but minor, shortcoming is the omission of explanations for several diagrams and figures. Thus a chart (p. 263) tracing the rise of output per man-hour and of real hourly earnings annually since 1899 is left "hanging in mid-air."[1] Likewise, a drawing (p. 271) illustrating the Langmuir invention of a tungsten filament lamp is deprived of significance by the failure to identify the symbols.

Notwithstanding the wide compass of the text, factual errors are few. The reviewer noted only two grevious ones: "The powers employed by the federal government over property include the power to regulate interstate commerce, the war powers . . . [*et al.*]. . . . These powers . . . are sometimes referred to as the federal 'police powers' " (p. 13). Not by courts or constitutional lawyers! "By the terms of the act [Fair Labor Standards Act] Congress imposed prohibitions on . . . the employment of workmen in industrial production for interstate commerce *at other than prescribed wages and hours*" (p. 19).

On the whole, Professor Mund's style is simple, direct, and clear. But a few excerpts will indicate that it is not free from blemishes. "The particular aspect of the public interest with which we are concerned in our present study is that of finding and effectuating the public interest in the economic area of man's relations, within the general framework of capitalism" (p. 55). "The doctrine . . . ['flash of genius'] . . . has been frequently used by the Supreme Court in its *growing* attempts to *increase* the standard for patentable invention" (p. 268). "The new interpretation placed by the Supreme Court on the Sherman Act in relation to unions was first developed in the Apex Hosiery case" (p. 569). "Government intervention—in the form of minimum wages, 'parity' prices, and enforced collective bargaining—moreover, has been extended to numerous lines of activity disadvantaged by monopolistic control in industry" (p. 628).

Lest this review leave the impression that Professor Mund's volume does not measure up to the current standard of a good textbook, let it be reiterated for emphasis that the book shows great erudition, patient attention to details, and earnest devotion to the public weal. Its classroom use should facilitate, if not a solution of the problem of industrial government, at least

[1] Though the data plotted on the chart are not discussed at this point or elsewhere, the textual citation of the chart follows this question: "How are the gains of technology to be made available to the people—to the nation as a whole?" The clear implication is that since, over the half century, output per man-hour rose approximately 230 per cent, and real hourly earnings only some 163 per cent, wage-earners got gypped. "The people," in short, "wuz robbed." If this was not the idea Professor Mund sought to convey by introducing the chart, his object is unfathomable to this reviewer.

a better understanding of the manifold obstacles to the practical realization of the competitive ideal. If the reviewer has any misgivings about the value of this textbook, they arise not from disagreement with the author's conception of the goal of public economic policy but from doubts regarding his views on the nature of the chief obstacles to its attainment and the aptness and adequacy of the methods outlined for overcoming them—whether preliminarily in the academic classroom or ultimately in the public forum.

MYRON W. WATKINS

New York, N.Y.

Public Utilities; Transportation; Communications

Economics of Transportation. By MARVIN L. FAIR and ERNEST W. WILLIAMS, JR. (New York: Harper. 1950. Pp. x, 757. $5.50.)

In this new textbook, Professors Fair and Williams have made generous use of the noun "economics"; it appears in the title of the book and in four of the five headings which subdivide the work into as many parts, as well as in the body of the book. (The five parts are titled Economics of Transportation Development, Economics of Transportation Service, Economics of Transportation Rates, Economics of Transportation Regulation, and Problems of Transportation Policy.) I approve this emphasis on economics, because unfortunately transportation specialists have tended for some time to introduce a mass of historical and other purely descriptive details into their books at the expense of economic analysis. If we go back far enough, or to the days of Hadley, Acworth and Ripley, transportation works were essentially treatises in applied economics. Also, distinguished general economists—Taussig, Seligman and Pigou—devoted considerable attention to the more theoretical aspects of transportation problems. But, with the passage of time, this close rapport was lost, until it appeared that economic theorists and transportation specialists had almost ceased communication.

I, therefore, began to read *Economics of Transportation* with the hope and keen anticipation that the authors had set themselves the task of helping to restore contact by featuring economic analysis in a transportation textbook. Several authors had already pointed the way with excellent textbooks, notably Locklin and Bigham, and it seemed to me that the time was ripe for another forward step to be taken. I have to report regretfully that, in spite of its many commendable features, the book falls considerably short of my expectations.

I shall illustrate my point by reference to those parts of the book which apply economic theory to transportation analysis. The crucial test is the use made of theories of monopolistic competition (including oligopoly), which are not only highly characteristic of modern economic thought but are also directly applicable to the field of transportation. This valuable bag of tools has been available for many years, or at least since Professor Chamberlin and Mrs. Robinson published their now classic studies in the 1930's. Yet, one looks in vain in the book under review for applications of the monopolistic-competition analysis to transportation. It is to be regretted that the authors have missed the opportunity to trace the effects of a limited number of com-

peting companies, of differentiated services, and of so-called competitive advertising on rates and services in the modern transportation market.

The parts dealing with applications of economic theory to transportation problems are, therefore, more out of date than I had expected to find. As a matter of fact, some of the theoretical errors which have appeared before in transportation textbooks are repeated by Fair and Williams. One of the most important of these concerns the nature of decreasing cost. In their discussion of this subject, the authors say, "... The principle of decreasing costs simply means that as output is increased the cost per unit declines. Fuller utilization of the carrier's facilities, through heavier and more balanced traffic, results in lower cost per ton-mile of service performed. This tendency to decreasing cost conditions is particularly significant among railroad lines because of prevalent and extensive excess capacity" (p. 370). The authors appear to have confused the conditions necessary for long-run decreasing costs (economies of scale) with those of underutilization of plant (over-capacity or insufficient total demand). While larger output would in either case tend to result in lower average unit costs, this identity in behavior is lost once the plant is operated beyond and to the right (on a curve) of the least-cost (optimum) point. When output is expanded beyond this point, short-run average costs will tend to rise, but the behavior of long-run average costs will depend on the presence or absence of economies of scale as plant capacity is increased.

The authors have also exhibited some uncertainty about the nature and significance of the distinction between common and joint costs. They write, "Transportation theorists have contended that differences in rates would essentially disappear under conditions of free competition. In practice this assumes that all common and joint costs would be prorated equally among commodities carried where no difference in cost of service exists" (p. 372). If the service is homogeneous and competition is perfect, rates will be equal to average unit costs, including overhead as well as variable costs. (Average unit costs will also be equal to marginal costs.) But under conditions of joint cost, the services are not homogeneous, even though they are supplied jointly, and the quantity of the services offered to the public tends to be determined by the equilibrium of the total receipts and costs of all services. Within the joint-cost framework, the rate charged for each service is determined largely from the demand side, and the indirect expenses are not prorated equally among the several services, no matter how free the competition may be otherwise.

I shall now offer a few comments on the chapters devoted to regulation. The discussion contained therein is quite brief and matter-of-fact, and I thought rather lacking in insight into the great regulatory problems of our day. This defect, however, is partially remedied in the final chapter of the book on national transportation policy. A curious omission is the failure to mention the recent controversy over the legal status of railroad traffic associations and rate bureaus, and the much-debated Bulwinkle Bill which is designed to place them under the protection of the Interstate Commerce Commission.

In spite of important omissions and errors, some of which I have mentioned,

this is a welcome addition to the literature of transportation economics. The writing is generally clear and suitable for elementary students. The authors depict the function of transportation in the present economic system, and judiciously minimize description of the history and development of transportation facilities. The nature of transportation service is featured, a welcome innovation in a textbook. The final part on questions of policy is written in a temperate and thoughtful style, and I find myself in general agreement with the authors' recommendations for a national transportation policy.

I can perhaps sum up my evaluation of the book by saying that it will serve well the needs of elementary students who do not intend to specialize in the field of transportation economics. Some of these students will be attracted from Arts but the bulk of them will be enrolled in the various curricula in Commerce. For those elementary students who plan to major in transportation, the book will also be useful, provided it is supplemented with suitable readings in other books and in professional journals.

RALPH L. DEWEY

The Ohio State University

History of the American Newspaper Publishers Association. By EDWIN EMERY. (Minneapolis: Univ. of Minnesota Press. 1950. Pp. 263. $3.50.)

The American Newspaper Publishers Association was established in 1887 primarily to further the business interests of the press. Among other things, it has been concerned with rival communications media such as magazines, billboards, car cards, and more recently, radio and television.

Emery succeeds in clarifying the picture of what radio and the great depression did to newspaperdom during the 1930's. Confusion here generally arises from the fact that gross advertising billings to newspapers dropped some 40 per cent between 1929 and 1933, and barely regained 1929 levels a decade later. Whereas, during the same five-year period, radio billings soared 112 per cent. Or, to take another line: newspaper's portion of advertising billings to newspapers, magazines and radio toppled from 81 per cent in 1928 to 50 per cent in 1945, while radio's share rose from 1 per cent to 29 per cent. Small wonder that, almost in "self-defense," the proportion of newspaper-affiliated stations rose from 11.1 per cent in 1931, to 30.8 per cent in 1940, or that the ANPA took drastic steps against the young upstart radio. The really fundamental questions, however, were hardly raised until the newspaper-radio struggle had spent itself. They were: how much *new* money radio brought into the national ad revenue pie; how much it took from older media *other than* newspapers; and the extent to which the drop in newspaper ad lineage resulted from *cyclical* forces.

Emery places himself with those who would refrain from jumping to hasty conclusions upon superficial examination of available figures. He holds (p. 200) that before 1933 the depression and not radio was the chief culprit; that "other communications media, not the newspapers" lost most to radio. This he urges despite the Media Records Inc. report (cited at the ANPA's Convention in 1931) that 107 leading radio advertisers cut news-

paper appropriations 12½ per cent in 1930 over 1929 while increasing radio outlays 63 per cent and magazines 6.3 per cent. Statistical evidence and testimony presented at the F.C.C.'s Newspaper-Radio hearings in 1941, incidentally, are compatible with the author's view. The verdict then was that though radio "undoubtedly took some revenue from newspapers," it was impossible to tell how much.

In any event, wholly justified or not, the ANPA's attitude towards radio unquestionably changed after 1929. As the author relates, radio news bulletins and newspaper program logs, once considered valuable stimulants to newspaper sales, were found inimical to the publishers interest. Not only for hitting newspaper *circulation,* incidentally, but because advertising revenues supposedly suffered *despite* the fact that readership actually grew during the 1930's. The ANPA blamed, in part, the publicity value of radio columns and program logs carrying sponsors' names, both of which broadcasters used occasionally in soliciting advertising.

Emery rightly points to the birth of national networks and the Federal Radio Act of 1927 which brought order to the airwaves, as important factors strengthening radio's challenge. He also observes that the practice of granting broadcast licenses to applicants most likely to serve the "public interest, convenience and necessity" possibly encouraged radio to become an informational, news-disseminating medium as well as a source of entertainment. But, we must remember that the ANPA's opposition to sponsored news broadcasts in 1935 was based on more than its fear that newspapers would lose revenue and therefore be unable to render the highest quality service. The Association sincerely believed that advertisers would take over the final editing of news and thus endanger its reliability. In the eyes of the ANPA, at any rate, the public's interest here coincided with its own business interests.

The author might have speculated more on whether the newspaper-radio struggle and affiliation movement of the 1930's may be repeated with television. The situation is clearly analogous. And it is significant public policy-wise that even now as newspapers buy heavily into the new medium, and motion pictures seriously contemplate doing likewise, many industry and government officials agree that thus far television has brought considerable *new* money into the total ad revenue pie, as well as stealing from older media.

HARVEY LEVIN

Pennsylvania State College

Industry Studies

The Economics of Pulp and Paper. By JOHN GUTHRIE. (Pullman: The State College of Washington Press. 1950. Pp. xi, 194. Cloth, $2.50; paper, $1.50.)

The author's announced purpose in this small volume is twofold: "to assemble and analyze the available economic data pertaining to this industry so that our understanding of its place in and impact on the economy

may be as complete as possible, and to examine and appraise its particular problems and trends in the light of current economic analysis." It is also proposed to ". . . throw additional light on an important phase of economics —the operations of an industry and the individual firms comprising it."

A creditable service has been performed in bringing together in one volume some of the statistics which have been hitherto almost unavailable, and especially in bringing into at least partial focus some of the problems of paper production on the Pacific Coast. The task of interpreting the economics of the pulp and paper industry—whatever that is—still remains to be done. It is unquestionably too large a job for such a small volume, and probably too large a job for any one man.

The author's ability to handle the newsprint industry[1] and to interpret its problems is not questioned by this reviewer. When he moves to other and completely separate parts of this (improperly so-called) pulp and paper industry, for example, paperboard—which has a different association, different companies, different problems, and different statistics, none of which are included in this volume—the author's apparent lack of familiarity with the source materials of those other branches has betrayed him. Because paperboard comprises about half of the total paper and pulp consumed in the United States, this has seriously damaged the volume's value. In a similar manner, little attention is paid to wastepaper and its problems, although it is the principal source of raw materials for a large portion of the paperboard industry, and accounts for about 30 per cent of the total fibres used in paper manufacture in the United States.

If another attack is to be made on these problems, there are some points which must be borne in mind:

1. The nature of the pulp and paper business is such that some mills are pulp producers, selling "market" pulp to paper manufacturers. Some produce paper entirely from "market" pulp. A third group produce paper from pulp of their own manufacture. Pulp statistics as such usually show only the "market" pulp. To generalize from such statistics is difficult at best, and often meaningless.
2. Such generalizations are particularly meaningless when there is eliminated from the discussion any Canadian or Scandinavian pulp—which are by far the principal sources of pulp for United States non-integrated paper mills. There is no national economics in this end of the business.
3. Cost data, by their very nature, must be carefully scrutinized for content and method before acceptance. Every table in the discussion of regional cost differences carries as a source "estimated by the writer," or "estimate based on confidential data." Conclusions based on such data are unacceptable to this reviewer.
4. Cooperative activities in an industry generally give a good clue to its economic problems, and the pulp and paper industries are noted for their effectiveness in this regard. Small attention is paid, however, to some of the cases

[1] As witness his excellent volume, *The Newsprint Paper Industry, An Economic Analysis*, published by Harvard University Press, 1941.

brought to the authorities, and none whatever to the paperboard rationalization scheme, which was perhaps the most effective of all.

The volume may be helpful to a person who is beginning his study of paper as such, particularly if he is interested in the problems of the Pacific Coast. It adds little to our understanding of the operation of these diverse industries or of the firms which comprise them. It is to be hoped that one of these days there will be prepared a thorough analysis of the pulp and paper industries, which are important not only because of their combined size, but because their methods of operation and their problems mirror the whole economy. It will, however, likely be a series of studies on the individual industries which comprise the group called paper and pulp, because of their diversity.

JAMES E. GATES

University of Georgia

Land Economics; Agricultural Economics; Economic Geography

America's New Frontier: the Mountain West. By MORRIS E. GARNSEY. (New York: Alfred A. Knopf. 1950. Pp. xviii, 314. $3.50.)

From the earliest days of the Republic, there has been sharp awareness of regional differences within the country—differences in economic problems and potentials, political alignments, and social and cultural backgrounds and aspirations. One of the persistent efforts of American statesmanship in government and business has been to contain these differences and channel the energies associated with them into constructive and nationally integrated programs.

More recently, economists have been turning their attention to various economic regions or areas within the United States and in the other parts of the world. In close alliance with public administration and sociology and in response to economic, geographic, political, and other forces which demand a halfway house between the States and the Nation, economics, always a fissionable subject, seems to be spawning a special isotope called regional economics.

Professor Garnsey's book on the Mountain West in many ways is the best regional study yet made. In the first place, it reflects a dozen or more years of living in the Mountain West, teaching at the University of Colorado, thinking and writing about the mountain-high plains economy, and participating in various progressive movements in that region. Second, the book definitely has a thesis and a program for action broad and deep enough to meet the development problems and challenges of the Mountain West, which means the book is not economics narrowly confined. Third, there is much careful statistical and analytical work behind the various generalizations presented, but the author considerately refrains from employing figures to overwhelm the reader. Fourth, the emphasis is upon a developing and balanced region within a growing national economy; eastern Peter is not to be robbed, at

least unduly, for the benefit of western Paul. Finally, Garnsey writes with an easy, direct style and the book is beautifully designed and printed.

According to Garnsey, the Mountain West (Montana, Idaho, Wyoming, Nevada, Utah, Colorado, Arizona, and New Mexico) now stands at the crest of a divide. Ahead lies economic expansion with jobs for more people, higher incomes, and a greater regional contribution to the national economy —or relative decline and general stagnation. "The American people are now making decisions which will determine whether the Mountain West is to become a backwoods or a frontier in American life. . . ."

In terms of population, income growth, and the development of manufacturing, the Mountain West, Garnsey maintains, has been a victim of "leap-frogging." The economic spotlight was directed on this region briefly and in its proper turn during the bonanza mining years in the late nineteenth century, but then quickly shifted westward to the Pacific Coast, where it now shines strongly, leaving the mountains in the shade. How may this gap in our westward development be filled in, Garnsey asks. How may the traditional, time-honored western liberalism reassert itself, escape the clutches of the special-interest blocs which have perverted it, and lead to a rebirth of economic development?

Garnsey calls for a new liberal political and economic movement in the Mountain West based on three major issues: economic expansion, the decentralization of economic control, and the conservation of natural resources. Even more so than in earlier periods of western expansion, the new era of economic development in the Mountain States should be ushered in by large direct or indirect government investments in multiple-purpose land, water, forest, and mineral development projects. Investment potentials, Garnsey estimates, include three to four million additional acres of land which might be reclaimed by irrigation, 12½ million additional kilowatts of hydroelectric power, a two-billion-barrels-per-day oil shale industry, and a large atomic energy program. These kinds of basic conservation and development works would total 650 to 800 million dollars a year in present construction costs for the next two decades or so, and might be accompanied by about four times as much additional investment, much of which would be industrial investment and of great benefit to an under-industrialized region.

To facilitate a regional investment program of this magnitude, roughly three and one-quarter to four billion dollars a year, Garnsey suggests measures aimed toward decentralization of economic activities and controls, plus vigorous conservation programs at all levels—from the individual farmer, stockman, forest operator, and miner to the largest resource-using corporation, and from local governmental units to the federal government. Decentralization is to be furthered by continued efforts to readjust and rationalize the freight rate structure and freight classifications to the relative advantage of the West, by the elimination of basing-point pricing in gasoline, sugar, and other commodities important to this part of the country, by the encouragement of regional raw materials processing and other industries, and by the reduction of "absenteeism" and the "habit of exploitation." On the public

administration side, Garnsey makes a strong case for regional authorities adapted from the TVA model.

As a resources conservation frontier, Garnsey visualizes the Mountain West as capturing national leadership and guaranteeing its own future. Seven of the twelve points in his concluding program for action bear directly upon such matters as soil, range, and forest conservation and reclamation, exploration and more careful utilization of minerals, and water and hydroelectric development. The key to these developments is public investment in dams, irrigation ditches, transmission lines, and conservation works—all built sufficiently ahead of the traffic to encourage the actual development of the traffic.

Within this large framework, several chapters will be of particular interest to economists. Following sections on the place of the Mountain West in the American economy, the resources base and the economic base, is a section on the relative economic position of the region, with separate chapters on income, productivity, a balance of payments for the Mountain West, and institutional barriers to regional development. These chapters bring out such elements in the region's economy as: (1) the relative lack of industry in the region, and the dependence of its inhabitants for their incomes on trade and services and government; (2) the apparent paradox of relatively low per capita income with relatively high man-hour productivity in industry and agriculture, due to the heavy weighting of low value-added activities in the Mountain West economy; (3) the approximate size and trends of the major components in the region's balance of payments, in which large out-payments in the region's minerals account are offset by large in-payments in the federal government account; and (4) the critical importance of freight rates and pricing practices to regional development.

The series of chapters on politics and economics is highly illuminating with regard to the practices and inconsistencies of the famous silver bloc and the special interests representing sheep and sugar. The beet sugar industry, the evidence indicates, at long last has nearly become sturdy enough to stand on its own feet without benefit of tariff. But, as Garnsey says, a good many people will be waiting to see if this is really true.

The author rightly puts his finger on water as the most critical single item in the Mountain West economy, the loss of large amounts of which to other areas would cripple permanently the economic development of the region. The efforts of California on the one side and the downstream Missouri River States on the other to beg, borrow, capture, or steal water away from the headwater Mountain States constitute one of the absorbing stories of the day, and serve to keep those vitally concerned in a perpetual boiling-over condition.

Certain criticisms of the book may be made, but they are minor for the most part. Future editions, of course, will be revised to take account of the 1950 Census reports. Projections of the regional labor force to 1950 under three different assumptions look a little silly now, although one can't expect the author and the publisher on this account to hold back publication of a

book that is ready. The impact of recent events in Korea and the Far East probably calls for a reassessment of the security advantages of industrial decentralization and regional economic balance, which would upgrade the locational desirability of the Mountain West.

Economists might wish also for a deeper analysis of the possibilities and limitations of scheduling regional development investments to help compensate for regional and national economic fluctuations. The case for large additions to the irrigated acreage is made convincingly in terms of balanced development, economic and social, of the region. However, in terms of the whole country, which offers potential increases in agricultural production by means of land drainage and clearing, increased use of fertilizers and machinery, and other means, the case for western irrigation is not so clearly demonstrated.

The main contour lines of the book are accurately drawn and reveal sharply the region's economic and related political and social characteristics, problems, and potentialities. Garnsey has prepared a thoughtful, well-integrated study of the Mountain West which will be of greatest interest to persons in that region and to all others who are tempted to take Greeley's advice to young men about going west.

JOSEPH L. FISHER

Washington, D.C.

Labor

Introduction to Labor Economics. By ORME W. PHELPS. (New York: McGraw-Hill. 1950. Pp. xvii, 554. $4.50.)

This volume, according to the author, is designed ". . . as an introductory textbook in labor economics, intended for upper division students (juniors and seniors) in liberal arts colleges or professional schools of business, social-service administration, or applied economics." And this reviewer would add: The volume has the great merit of concentrating on the significant issues of the labor market.

The first part of the volume (75 pages) deals with the general setting of labor problems: what labor problems are about, how they should be approached, the industrial and occupational distribution of the labor force, and some aspects of the American business system. Professor Phelps accurately emphasizes that every labor problem is a *total* problem (economic, psychological, etc.), but is careful correctly to stress that "Many labor problems are settled largely on the basis of a single set of facts. The question turns out to be primarily economic, legal, political, or psychological . . . [although it is not] possible to weight the disciplines in advance, assigning a definite priority of rank" (pp. 10, 11). It is questionable, however, whether it is accurate to aver that ". . . most labor problems are solved at the level of definition and measurement" (p. 12). For factual information by itself, no matter how copious, is never enough to "solve" a social problem since the interpretation given to the data will vary with the observer in question. And the variegated interpretations do not stem from purposeful bias so much as

they do from the exposure of the observers to different environments and different facets of the problem—not to mention the varying innate traits of the observers themselves.

The second part of the volume (78 pages) deals with wages. Professor Phelps' clarification of the different meanings attached to the term "wages" should prove helpful to teachers and students alike. Following this clarification, he proceeds to examine a number of wage theories (marginal productivity, the bargain theory, and the so-called Keynesian theory). Professor Phelps does not state categorically just what a theory of wages is designed to accomplish. Should it explain the process of wage *determination* or the process of *adjustment* in employment (and other variables) to a given wage change? Should it focus on the individual firm? On the relevant industry? On the entire economy? The author's failure to demarcate clearly the functions of a wage theory leads to some confusion in the reader's mind. Thus, for example, under the rubric of "Keynesian theory" Professor Phelps analyzes the adjustment of prices and employment to given wage changes; while under the "bargain theory" he analyzes the process of wage determination, and under "marginal productivity" he is doing both. Where, then, is the common denominator, which is a *sine qua non* for comparative purposes? Again, he shuttles between micro-analysis (pp. 100, 101) and macro-analysis (pp. 114 ff.) without explaining the fundamental difference in the two approaches. Finally, the author avers that Keynes was a bitter critic of the marginal productivity theory (pp. 90, 111), which is hardly accurate.[1] As a matter of fact, Keynes relied on the marginal approach whenever he had anything to say (explicitly or implicitly) about the theory of the firm. And in so far as macro-analysis is concerned, there is no inconsistency between the marginal analysis as expounded by (say) J. B. Clark and the analysis of *The General Theory*. For Clark was concerned with variations in the distribution of the national income among the different factors of production within the context of a given level of general employment, while Keynes was concerned with variations in the level of general employment under a given pattern of income distribution.

In summarizing the basic content of the marginal productivity theory the author fails to take account of the numerous refinements in that theory which have emerged in recent years—for example, the exploitation analysis. And while Professor Phelps covers many of the "standard" criticisms of the marginal approach, he does not even mention the fundamental weakness of the theory which has received cogent scrutiny by Boulding, Reder, Cooper and others—namely, the assumption of profit maximization. Nowhere, finally, does the author provide the reader with what he (the author) believes is an "accurate" theory of wages.

Part Three (86 pages) deals with employment security. Professor Phelps explains very clearly the different kinds of unemployment to which the economy is subjected, and also describes unemployment due to disability and discrimination. His emphasis on the point that the impact of technological unemployment is a function of cyclical unemployment is very pertinent. His

[1] *Cf. The General Theory,* especially p. 140, note 1.

total analysis of technological unemployment is, however, a somewhat sketchy two-page treatment.

In analyzing cyclical unemployment, which Professor Phelps correctly diagnoses as the real culprit in an enterprise economy, the author relies on the "Keynesian framework." While he uses this framework competently, he has failed to emphasize Keynes's principal contribution—namely, an insight into the long-run, structural changes of a capitalistic economy. It is hardly surprising, therefore, that the so-called secular stagnation thesis receives only brief attention.

The final part of the text (290 pages) deals with the history of trade-unionism, union government, union policies and tactics, and the rôle of government in collective bargaining. By and large, the material is presented in a fashion which the student should find interesting. Particular mention should be made of the author's stress on the important rôle of labor leadership in fashioning the pattern of collective bargaining, a point too often neglected in the literature. Approximately one-fifth of the entire volume, however, is devoted to the history of trade-unionism. While these pages provide the reader with an interesting picture of the important labor developments in the past, this reviewer would question the advisability of devoting so much space to the history of unionism. He would go further and question the scientific validity of studying the "general history" of unionism altogether. The ultimate function of any social science is to analyze problems and provide mechanisms of control. Historical material in any social science constitutes one of the sources of evidence in this process, and the study of so-called labor problems is no exception to these procedural dictates. But we cannot analyze labor problems "in general," for the issues to which scientific analysis must address itself in reality are concrete and specific. They may relate to union growth, the methods of wage payment, output restriction, labor turnover, etc. And in each case the analysis must, at least in the present stage of scientific inquiry, rely substantially on historical material. However, the "useful" historical material is not just labor or union history "in general." Instead, the relevant historical data must be brought into play as each particular labor issue is analyzed. Thus, for example, when one is dealing with union policies toward incentive wage methods, the historical material bearing on this problem (and not on unionism "in general") must be utilized. To be sure, if one is interested primarily in painting tableaux of past labor events, there is room for history of unionism "in general." But such an interest, while perhaps laudable from some viewpoints, can hardly be termed scientific.

The discussion of trade-union policies is rather brief (40 pages) in view of the impact of these policies on both market and non-market values. In some instances the logic of the policy is not explained. Thus, for example, the rationale of trade-union wage policy is neglected despite our relatively accurate understanding of this rationale owing to the work of Slichter, Dunlop, Ross, Myers, and others. And the economic implications of the various union practices are inadequately developed.

The volume as a whole can probably stand better integration of the constituent parts. While the presentation within each part is coherent, the inter-

relationships between the material in the different parts are neglected. One gains the impression of reading three well-written but unrelated monographs. To illustrate: In describing trade-union policies the author makes little attempt to relate these policies to the problem of unemployment analyzed in a preceding sector of the book. Again, while general wage changes are discussed in Part Two, they are not adequately called into play (either by cross-reference or otherwise) in Part Four, which deals with general unemployment.

The author also opts in favor of the presentation of several alternative theories on certain issues—for example, wages and the labor movement. While there is much to be said for such an approach, there is probably just as much (if not more) to be said against it. Given the space limitations of a text, the theory summaries must of necessity be brief and rather superficial. As a consequence, the student may easily gain an erroneous interpretation of the theory. Further, the student misses the opportunity of reasoning through in detail the analysis in question. He may, instead, well be encouraged to memorize the summary basic ingredients of each theory, without grasping the nature or significance of the viewpoints in question. To prevent such difficulties, it would seem advisable to present only one theory or viewpoint in detail. True, such an approach involves a danger: the student might be left with the impression that the viewpoint presented is the only one prevailing. Yet such a danger can be obviated by a brief notation to the effect that other theories are held by other observers. The student can thereafter, if he is interested, pursue the alternative explanations either on his own or in more advanced courses where such alternatives are discussed in detail. And he will be in a position to do so intelligently, precisely because he has learned how to engage in careful analysis by working through exhaustively one particular viewpoint.

The above comments do not alter the fact that Professor Phelps has written a volume which contains a great deal of interesting and useful information, which many teachers and students should find very helpful. The author's ability to express his thoughts in simple, "down-to-earth" language is an admirable quality which can prove only of the most constructive value in the classroom. The book has the further merit of avoiding minutiae and concentrating on the important issues. Finally, the bibliography and exercises provided by the author are a worthwhile pedagogical device.

JOSEPH SHISTER

University of Buffalo

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NOTES

The following have been appointed members of the American Economic Association nominating committee for the current year: Howard S. Ellis, University of California, Chairman, Karl R. Bopp, Federal Reserve Bank of Philadelphia, George A. Elliott, University of Toronto, Charles P. Kindleberger, Massachusetts Institute of Technology, Lloyd A. Metzler, University of Chicago, and William H. Nicholls, Vanderbilt University. The chairman of this committee would appreciate receiving any suggestions for officers for next year as soon as possible.

The First Conference of the International Economic Association

The International Economic Association was formally established by a constituent meeting of its Council, held in Monaco from September 10 to 13, 1950. At the same time, the Association held its first Round Table discussion, on the Problem of Long-Term International Balance.

The conference was attended by about forty economists from some fifteen countries.

The Council meeting adopted the statutes and elected the executive committee and the officers of the Association. They discussed the functions and policy of the Association after an introduction by M. J. Rueff.

The statutes which were finally adopted are substantially identical with the preliminary draft which was published in the *American Economic Review,* March 1950, pp. 173-76. The new International Economic Association is a federation of national associations. So far, the economic associations of the following countries have joined: United States, Great Britain, France, Belgium, Norway, Denmark, Netherlands, Canada, South Africa, Austria, Germany, Turkey, Greece, Sweden, Switzerland.

The Round Table

The Round Table discussions proceeded on the basis of eighteen background papers which had been circulated before or during the meeting but were not read there. The preparation of the program and discussion plan had been in the hands of Professor E. A. G. Robinson of Cambridge University, in close contact with Professors J. Schumpeter and G. Haberler of Harvard University. Mr. Hal B. Lary, Director of Research and Planning, E.C.E., Geneva, Sir Hubert Henderson, Professor at Oxford University, Professor L. Dupriez, University of Louvain, took a prominent part in the debate by introducing and summing up the discussion under particular headings.

Plans for future activities were discussed and it was decided that for the near future the main task of the I.E.A. would be to hold Round Table discussions on certain selected topics. These conferences will be open to invited guests only, the number of participants being held to about thirty. The topic for the 1951 Round Table will be "Monopoly and Competition and Their Regulation."

Election of Officers

With the formal establishment of the I.E.A. through adoption of its revised constitution, the Interim Executive Committee was replaced by a newly elected Executive Committee, to hold office until the next meeting of the Council. The Council is to meet every three years. Those elected are: president, Professor Gottfried Haberler (United States); vice president, Professor L. Dupriez (Belgium); treasurer, Professor E. A. G. Robinson (Great Britain); Professor F. Perroux (France); Professor W. Keilhau (Norway); Professor X. Zolotas (Greece).

The Executive Committee was purposely kept very small, in the interests of efficiency in the first place, but also to allow for possible expansion as new national associations join the I.E.A.

Tribute to Professor Schumpeter

Special tributes were paid by the International Economic Association to its first president-elect, the late Professor Joseph A. Schumpeter, whose passing last January was

mourned by the whole world of economic science. A telegram of sympathy was sent to Professor Schumpeter's widow.

The following economists were elected honorary presidents: J. M. Clark (United States); Luigi Einaudi (Italy); E. Heckscher (Sweden); A. C. Pigou (Great Britain); Charles Rist (France).

Dr. Helene Berger Lieser was appointed secretary of the I.E.A. Her offices are at 27, rue Saint Guillaume, Paris (7e) (Institut de Sciences Politiques).

DIRECTORY OF AMERICAN SCHOLARS

The second edition of the *Directory of American Scholars* is again being undertaken by The Science Press. The purpose of the *Directory of American Scholars* is practical rather than honorific, and to that end approximately 25,000 biographies are contemplated for the new edition, roughly twice the number contained in the first edition. There has been a somewhat slow response to the questionnaires which have been mailed out. All those who received questionnaires should mail them as promptly as possible to the editor. Those who have not received a questionnaire, but were included in the last edition, should notify the editor of the *Directory of American Scholars,* Lancaster, Pennsylvania, as he has some 2,000 returns which are undeliverable.

Deaths

J. Weldon Hoot, November 9, 1950.
William Walker Swanson, July 21, 1950.
Warren C. Waite, November, 1950.

Appointments and Resignations

Joseph Airov is instructor in economics in the School of Business Administration of Emory University.

Frederick Amling has been appointed instructor in finance, Wharton School of Finance and Commerce.

Richard J. Bannon has been appointed instructor in accounting in the Graduate School of Social Science, The Catholic University of America.

Eugene R. Beem has resigned as instructor in economics at the Wharton School of Finance and Commerce.

Richard F. Behrendt is director of the economic research department of the Economic Development Administration of the Government of Puerto Rico.

J. Fred Bell is on sabbatical leave from the University of Illinois in the current semester.

Archie Blake has resigned as a government statistician to devote more time as treasurer and mathematical consultant with Mechanical Research Corporation of Chicago.

Arthur I. Bloomfield, of the Federal Reserve Bank of New York, gave a course on business cycles in the winter term of the School of General Studies of Columbia University.

Karl A. Boedecker is associate professor of general business at Michigan State College.

Clarence E. Bonnett has been named emeritus professor of economics, College of Commerce and Business Administration, Tulane University, following his retirement in July, 1950.

Samuel L. Booth is assistant professor of economics at Juniata College.

Philip J. Bourque has been appointed instructor in economics at the Wharton School of Finance and Commerce.

Francis J. Bowden, Jr., is instructor in finance at the Wharton School of Finance and Commerce.

Raymond T. Bowman has been promoted from associate professor to professor of economics at the Wharton School of Finance and Commerce.

Dorothy Brady is on leave from the University of Illinois this semester to serve as consultant to the Bureau of Labor Statistics.

Joseph R. Burchard has resigned as assistant professor of economics at Western Reserve University.

Brian C. Butler has been appointed instructor in industry at the Wharton School of Finance and Commerce.

Eugene Clark has been promoted from assistant professor to associate professor of economics at Ohio Wesleyan University.

John A. Cochran has been granted leave from the University of Illinois to serve with the U. S. Army.

Robert H. Cole is instructor in marketing in the College of Commerce and Business Administration of the University of Illinois.

John T. Croteau has been promoted to associate professor of economics in the Graduate School of Social Science, The Catholic University of America.

Frank S. Deming is instructor in accounting at the Wharton School of Finance and Commerce.

William F. Dinsmore has been appointed instructor in economics at the Wharton School of Finance and Commerce.

Evsey Domar is visiting associate professor in the department of economics, Columbia University, during the spring session.

William L. Doremus has been promoted from assistant professor to associate professor of marketing in the Graduate School of Business Administration, New York University.

Charles S. Dunford, of Michigan State College, will retire as professor emeritus of economics at the end of the current academic year.

James O. Eaton is assistant professor of accounting at Michigan State College.

John M. Erickson has been appointed assistant professor of business administration in the College of Commerce and Business Administration, Tulane University.

Arnold L. Fellows is associate professor of business communications in the College of Commerce and Business Administration, Tulane University.

Hy Fish has returned to Roosevelt College after serving on a mission of the Department of State as consultant on production problems to the government of Israel.

Albert B. Fisher has been appointed lecturer in marketing at the Wharton School of Finance and Commerce.

J. Marcus Fleming is visiting professor of economics at Columbia University during the spring session.

Robert J. Freedman has been appointed visiting assistant professor of economics at Colgate University.

E. E. Garrison has been promoted from associate professor to professor of marketing in the College of Business Administration of the University of Tennessee.

Charles Gilbert has been appointed instructor in economics and business administration at Wagner College.

John A. Grygiel is traffic analyst with the Santa Fe Railway System.

Robert M. Haig is on leave from Columbia University in the spring session.

James K. Hall has returned to the University of Washington after a two months' assignment as consultant on public finance for the U. S. Treasury in the Republic of the Philippines.

Walter W. Heller is on part-time leave of absence from the University of Minnesota to enable him to serve as consultant to the Treasury in connection with current tax legislation.

Thomas W. Holland has been appointed special lecturer in economics at the Graduate School of Social Science, The Catholic University of America.

John M. Hunter, formerly of Tufts College, has been appointed assistant professor of economics at Michigan State College.

Charles D. Hyson has been appointed special assistant to the chief of the ECA Special Mission to Portugal.

Arthur A. Just has been appointed instructor in finance at the Wharton School of Finance and Commerce.

Everett M. Kassalow, formerly executive secretary of the Full Employment Committee of the Congress of Industrial Organizations, has been appointed special labor assistant to the chairman of the National Security Resources Board.

M. Thomas Kennedy has resigned as associate professor of industry at the Wharton School of Finance and Commerce.

Anthony Koo has been appointed lecturer in economics at Michigan State College.

Robert Laws has been promoted from assistant professor to associate professor of labor relations in the College of Business Administration, University of Tennessee.

Eric Lawson, of Syracuse University, is visiting professor of economics at Michigan State College.

Agnes Liang has been appointed lecturer in economics in the Graduate School of Social Science, The Catholic University of America.

Richard W. Lindholm, professor of economics at Michigan State College, is on special assignment with the Board of Governors of the Federal Reserve System in the current academic year.

C. Albin Lindquist is instructor in advertising in the Commerce Department, Florida State University.

C. F. Marsh, upon return from a year's service as coordinator-consultant, Advisory Council on the Virginia Economy, has been promoted to Chancellor Professor of Economics and Business Administration at the College of William and Mary.

Martha Marshall has been appointed instructor in economics at the University of Colorado for the winter and spring quarters.

James W. Martin, on leave of absence from the University of Kentucky, is serving as a financial management consultant to the Turkish government of Ankara.

Fritz Machlup, of the Johns Hopkins University, lectured during the month of February at the Institute of Advanced International Studies in Geneva, at the University of Basle, and at the Swiss Institute for International Economics at the University of Zurich.

Arthur D. Maxwell has been promoted from assistant professor to associate professor of accounting at the Wharton School of Finance and Commerce.

John S. McGee, of Vanderbilt University, has joined the staff of the department of economics, University of California, Los Angeles.

S. Sterling McMillan, of Western Reserve University, has been granted leave in the current semester to serve as director, Regulations and Orders Staff, Industry Operations Bureau, National Production Authority, in Washington, D.C.

Gilbert M. Mellin has been appointed assistant professor of economics in the College of Commerce and Business Administration, Tulane University.

Arthur J. Mertzke is lecturer in general business at Michigan State College.

Howard C. Miller, Jr., has been appointed instructor in marketing at the Wharton School of Finance and Commerce.

Taulman A. Miller is on sabbatical leave from Indiana University in the current semester.

James E. Moffat is on sabbatical leave from Indiana University in the current semester.

Walter R. Myers was presented with a Certificate of Merit by the President and the Board of Regents of the University of Minnesota upon his retirement in June, 1950.

Philip Nelson has been appointed acting instructor in economics at the College of William and Mary.

Edmund A. Nightingale has been granted a part-time leave of absence from the University of Minnesota to serve in the Military Transport Service, Washington, D.C.

Louis Nuesse has been appointed associate professor of industrial management in the College of Business Administration, University of Tennessee.

Andreas G. Papandreou has been appointed professor of economics at the University of Minnesota.

Walter S. Peake has been appointed instructor in business law at the Wharton School of Finance and Commerce.

Almarin Phillips has resigned as instructor in economics at the Wharton School of Finance and Commerce.

Chester A. Phillips, professor of banking and dean of the College of Commerce, State University of Iowa, will retire to part-time service at the end of the current academic year.

J. Richard Powell, of the University of Texas, joined the staff of the department of economics, University of California, Los Angeles, in September, 1950.

Neal A. Pritchard has been granted military leave from Ohio Wesleyan University to serve with the U. S. Navy.

John Quinn has been promoted from instructor to assistant professor of business administration at the College of William and Mary.

C. L. Quittmeyer, of the College of William and Mary, is at the Graduate School of Business, Columbia University, on a University Fellowship Award.

W. Harold Read has been appointed budget officer of the University of Tennessee.

Sydney C. Reagan has been appointed chief of the economic analysis section of the Fats and Oils Branch, Production and Marketing Administration, Department of Agriculture.

William J. Robert has been appointed assistant professor of business administration in the School of Business Administration, University of Oregon.

Robert M. Robinson has been appointed assistant professor of economics in the College of Commerce and Business Administration, Tulane University.

Franklin R. Root has resigned as instructor in marketing at the Wharton School of Finance and Commerce.

George Rosen, formerly assistant professor of economics at Bard College, is now economic analyst in the Division of Research; Far East, Northeast Asia Branch of the Department of State.

R. A. Sabatino has resigned as instructor in economics at the Wharton School of Finance and Commerce.

Roger L. Sherman has been appointed assistant professor of business at Texas A. and M.

Louis Siegelman is an instructor in economics at Cornell University.

William E. Simkin is an instructor in industry at the Wharton School of Finance and Commerce.

Warren Slagle has been promoted from instructor to assistant professor of accounting in the College of Business Administration, University of Tennessee.

Cecil N. Smith is associate professor of agricultural economics at Virginia Polytechnic Institute.

Henry W. Spiegel has been promoted to professor of economics, Graduate School of Social Science, The Catholic University of America.

Conrad Stewart has resigned as instructor in economics in the College of Business Administration of the University of Tennessee.

Paul J. Strayer, of Princeton University, is working with the Economic Stabilization Agency.

Alice J. Vandermeulen has been promoted from assistant professor to associate professor of economics and appointed assistant dean of the faculty at Claremont Men's College.

R. F. Voertman, formerly of the University of Texas, has been appointed instructor in economics at Michigan State College.

Charles E. Walker has resigned as instructor in finance at the Wharton School of Finance and Commerce.

Joseph P. Wargofcak has been appointed instructor in finance at the Wharton School of Finance and Commerce.

Norma Waschler has been appointed instructor in industry at the Wharton School of Finance and Commerce.

Sidney Weintraub has been appointed visiting professor of economics at the Wharton School of Finance and Commerce.

James E. Williams has been appointed instructor in industry at the Wharton School of Finance and Commerce.

Robert L. Winestone is assistant professor of economics at Coe College.

Herman W. Wright, Jr., is instructor in economics at the Wharton School of Finance and Commerce.

Herbert K. Zassenhaus, on leave from Colgate University, is working with the Twentieth Century Fund in Washington, D.C.

THE AMERICAN ECONOMIC REVIEW

PAUL T. HOMAN, Managing Editor
DORIS MERRIAM, Assistant

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MATTHEW BROWN HAMMOND

Thirty-second President of the American Economic Association, 1930

Matthew Brown Hammond was born at South Bend, Indiana, July 13, 1868, and died at Columbus, Ohio, September 28, 1933. He received his academic training at the University of Michigan (Ph.B., 1891), the University of Wisconsin (M.L., 1893), and Columbia University (Ph.D., 1898). He also spent a year and a half in Germany (first at the University of Tübingen and then at the University of Berlin, 1893-94). He began his teaching career as principal of Versailles (Missouri) Institute in 1891-92. After a year as acting assistant professor of economics at the University of Missouri, he became instructor of economics at the University of Illinois in the fall of 1897. He was later promoted to an assistant professorship there. He left Illinois in 1904 to become assistant professor at Ohio State University and was later promoted to associate professor and in 1908 to full professor—which position he occupied until his death. From 1921 to 1928 he served as chairman of his department. In the summers of 1921 and 1922 he taught at the University of Chicago and at Columbia, respectively.

Professor Hammond was always interested in applied economics. He served in various administrative and advisory capacities on both state and national agencies. After aiding in the drafting of labor legislation in Ohio, he became a member of the Industrial Commission of the state. He served as member and secretary of the Ohio Coal Mining Commission in 1913 and was a member of the Ohio Health and Old Age Insurance Commission. During World War I he was labor adviser to the U. S. Food Administration and a member of the War Labor Policies Board. In 1920 he served as technical adviser to the U. S. Anthracite Coal Commission. During the academic year 1911-12, he went to New Zealand and Australia to study labor problems and labor legislation.

Professor Hammond served on numerous committees of the A.E.A. and was selected president in 1930. The title of his presidential address was, "Economic Conflict as a Regulating Force in International Affairs." Here he said laissez faire found its earliest application and here it is still most easily justified. He also took an active part in the affairs of the American Association for Labor Legislation and the Social Science Research Council. He was a member of Phi Beta Kappa and Beta Gamma Sigma. He served in various capacities in the Congregational Church of Columbus.

In addition to numerous articles in economic journals, Professor Hammond's publications include *The Cotton Industry* (1897), *Railway Rate Theories of I.C.C.* (1911), and *British Labor Conditions and Legislation During the War* (1919).

Number 32 of a series of photographs of past presidents of the Association.

M. B. Hammond

The American Economic Review

VOLUME XLI JUNE, 1951 NUMBER THREE

SOME ASPECTS OF WELFARE ECONOMICS

By A. C. Pigou*

I have been invited by the editor of the *American Economic Review* to write an article on "Some Aspects of Welfare Economics"; and I have accepted. Whether I ought to have accepted is more than doubtful. For a great deal has been written on this subject in recent years and most of it I have not read. Nevertheless, having agreed to write the article, I must do what I can. My book *The Economics of Welfare,* not revised since 1932, stood aside from some significant logical problems which arise out of the fact that real income is made up of a number of different things, the quantities of which vary in different proportions. It is with these problems, together with some semi-philosophical questions about utility, that "the new Welfare Economics," as it likes to be named, principally deals. The technique of indifference curves, preference maps and so on, which it employs, is, of course, machinery. Here I shall confine myself to fundamental issues.

I. *The Purpose of Welfare Economics*

Welfare Economics is concerned to investigate the dominant influences through which the economic welfare of the world, or of a particular country, is likely to be increased. The hope of those who pursue it is to suggest lines of action—or non-action—on the part of the State or of private persons that might foster such influences. Nobody supposes that economic welfare is coincident with the whole of welfare or that the State ought to pursue it relentlessly without regard for other goods—liberty, for instance, the amenities of the family, spiritual needs and so on. But here we are not concerned with these things; only with economic welfare, that is to say, the part of welfare that is associated with the economic aspects of life. First and foremost

* The author is emeritus professor of economics in Cambridge University.

we have to satisfy ourselves as to what that is and, more particularly, to decide whether or not it is the sort of thing to which the notions of greater or less and increase or decrease can properly be applied. For, if they cannot, Welfare Economics, every part and aspect of it, vanishes and leaves not a wrack behind.

II. *The Meaning of Economic Welfare*

Let us consider first a single individual. What do we mean by the economic welfare of such an individual? It will be generally agreed that this must be somehow resident in his state of mind or consciousness. When we speak loosely of "material welfare," in the sense of a man's income or possessions, that is not welfare as we are thinking of it here. Material welfare may be a *means* to welfare, but it certainly is not identical with or a part of it. As it seems to me, welfare must be taken to refer either to the goodness of a man's state of mind or to the satisfactions embodied in it. If we were prepared to say that the goodness of satisfactions depended simply on their intensity it might not be necessary to make this distinction. But it is generally felt, in a vague way, that some sorts of satisfaction are in their nature better than others, and that quite irrespective of whether or not they entail dissatisfactions later on. If this is right, a situation containing more satisfaction is not necessarily "better" than one containing less. For the present purpose, I propose to make welfare refer to satisfactions, not goodness, thus leaving it possible that in certain circumstances, a government "ought"—granted that it "ought" to promote goodness—to foster a situation embodying less welfare (but more goodness) in preference to one embodying more welfare.

A man's welfare then consists in his satisfactions. But what does satisfaction mean? Not simply happiness or pleasure; for a man's desires may be directed to other things than these and may be satisfied. It might seem that, when his desire attitude is given, his satisfaction depends straightforwardly on the extent to which his desires are fulfilled. But the satisfaction yielded when a desire is satisfied does not always bear the same proportion to the intensity of the desire. Not only may people make mistakes, desiring certain objects in the hope of satisfactions which they do not in fact yield, but also, as Sidgwick observed, "I do not judge pleasures to be greater or less exactly in proportion as they exercise more or less influence in stimulating the will to actions likely to sustain or produce them."[1] Some economists, neglecting this point, have employed the term "utility" indifferently for satisfactions and for desiredness. I shall employ it here to mean satisfactions, so that we may say that a man's economic welfare is

[1] *Methods of Ethics* (Macmillan & Co., England, 1893), p. 126.

made up of his utilities. For a full treatment we should need to bring into account also such dissatisfactions or disutilities as men may suffer from work, or, what is not quite the same thing, such further satisfactions or utilities as leisure yields to them. It would not be difficult to do this but doing it would complicate and lengthen the discussion. I shall not, therefore, trespass into that field.

III. *Measurability and Comparability in Principle of Satisfactions Enjoyed by the Same Individual*

I said in Section I that, if economic welfare were not something to which the notion of greater or less were applicable, Welfare Economics would vanish away. It is sometimes thought that this notion *cannot* be applicable unless satisfactions are measurable.

Now for magnitudes of any kind to be measurable means that a unique and reciprocal correspondence, a one-one relation, can be established between the magnitudes in question and cardinal numbers. Extensive magnitudes, such as length, are in general measurable in this sense. Pleasures, satisfactions, utilities, are intensive magnitudes and are not measurable. They are not the sort of thing that we can correlate with a series of cardinal numbers.

It is true, no doubt, that an intensive magnitude may sometimes be correlated with an extensive magnitude and so may be capable of being measured indirectly. This would be true of satisfactions if, by a miracle, they were correlated rigidly with levels of temperature or speed of pulse. Moreover, there is in fact available in our field an "extensive" magnitude of the kind required, namely the amount of money that a man would be willing to pay in order to avoid losing a given satisfaction, or pleasure. Marshall, it will be remembered, laid stress on the advantage which economics has over other social sciences in possessing this measuring rod. Apart, however, from complications about the relation between the intensity of desires and the intensity of the satisfactions that result when a desired object is secured, to which I have already referred, neither Marshall nor anybody else claims that money enables us to measure anything more than small parts of a man's satisfaction. If I have an income of £1,000, it is reasonable to say that the satisfaction I get (or, more strictly expect) when I spend £2 on a small increment of one commodity is likely to be twice as great as what I get when I spend £1 on a small increment of another. But nobody supposes that the satisfaction I get from the whole of my £1,000 income will be only 1,000 times as large as what I get from the expenditure of a single marginal pound. Money does not, therefore, enable us to correlate satisfactions with a series of cardinal numbers, that is, to measure it in the sense understood here. We must concede that they are not measurable in that sense.

This, however, is far from entailing that satisfactions are not in principle *comparable*. The following passage from Bertrand Russell makes this clear. "Those mathematicians who are accustomed to an exclusive emphasis on numbers will think that not much can be said with definiteness concerning magnitudes incapable of measurement. This, however, is by no means the case. The immediate judgments of equality, upon which (as we saw) all measurements depend, are still possible where measurement fails, as are also the immediate judgments of greater and less. Doubt only arises where the difference is small; and all that measurement does in this respect is to make the margin of doubt smaller—an achievement which is purely psychological and of no philosophical importance. Quantities not susceptible of numerical measurement can thus be arranged in a scale of greater and smaller magnitudes, and this is the only strictly quantitative achievement of even numerical measurement. We can know that one magnitude is greater than another and that a third is intermediate between them; also, since the differences of magnitudes are always magnitudes, there is always (theoretically at least) an answer to the question whether the difference of one pair of magnitudes is greater than, less than or the same as, the difference of another pair of the same kind. . . . Without numerical measurement, therefore, the quantitative relations of magnitudes have all the definiteness of which they are capable—nothing is added, from the theoretical standpoint, by the assignment of correlated numbers."[2]

A corollary follows—or seems to follow. Given that we are able in principle to say that the difference between one pair of magnitudes is greater or less than the difference between another pair, we must presumably also be able to say that about differences between differences. This entails that, in spite of the fact that utilities are not measurable, it is still legitimate in principle to imagine a marginal utilities curve and to say, not merely that it slopes down or up, but also that it slopes more or less steeply as we move along it from right to left.

It is indeed impossible even in principle to draw a base line for the curve. Non-measurability entails that. It is thus meaningless to say that the utility derived by one individual in a given period from x units of a commodity is twice, or any other multiple, of the utility derived from y units, or to say, for example, that the curve is a rectangular hyperbola or bears some specifiable relation to a rectangular hyperbola. This entails that we cannot compare the damage done to welfare by a given proportionate change in a man's income when he is enjoying incomes of different sizes. Such questions as whether a tax proportioned to income will inflict equal sacrifice upon him whatever the size of his

[2] Russell, *Principles of Mathematics* (Cambridge University Press, England, 1903), pp. 182-83.

income or whether a tax progressive in some given form and degree is required to do this, are unanswerable, not merely from lack of data, but in principle. Thus the non-measurability of utility rules out one type of question, which, were utility measurable, it would be legitimate to ask—and which, assuming that it *is* measurable, I did ask in Chapter 7, Part II of my *Study in Public Finance*. This does not, however, reduce the domain of Welfare Economics very seriously, nor does it seriously matter that such questions as whether aggregate welfare would be increased if the population were larger but individual satisfactions smaller are in principle, not merely in practice, unanswerable.

IV. *Comparability in Fact*

So far I have been discussing comparability in principle; are satisfactions or utilities the sort of things which can be held in the relation of greater or less or is it nonsense to maintain this of them in the way that it is nonsense to maintain that one is more red or more liquid than another? I have answered that question. But, granted that these things are comparable in principle, it is a quite different question whether they can be actually compared. If we found that they could not be actually compared, it would not follow that they are incomparable in principle. If all thermometers and kindred gadgets were destroyed, this would not upset at all the comparability in principle of temperatures. *Per contra,* to find, as we have done, that utilities, differences among utilities and differences among these differences are comparable in principle does not imply that all or any of them can be compared in fact. Subject, however, to a qualification to be mentioned presently, it is generally agreed that, when an individual chooses satisfaction A in preference to satisfaction B, this *indicates* that satisfaction A is or, more strictly, is expected to be greater than satisfaction B. Choice thus provides an objective test of the comparative magnitudes of different utilities or satisfactions to a given individual. It does the same for marginal utilities or satisfactions, that is the utilities derived from marginal increments of different sorts of goods. But nobody chooses or can choose between the *excess* of marginal utility A over marginal utility B and the *excess* of marginal utility C over marginal utility D. Hence these second differences, though, as I have maintained, comparable in principle, are not comparable in fact—at all events by means of this kind of test. The point, however, is not important for our main argument.

V. *Inter-personal Comparisons*

So far we have been considering only the comparability of satisfactions as affecting the same person. Once we reject solipsism and admit the existence of other people, what has already been said should suffice to show that the utilities enjoyed by different people are not in their

nature incomparable—it is not nonsense to say that A is happier than B. But the question whether they are comparable in fact is a more difficult one. The test of choice is not available here as it is for intra-personal comparisons. No doubt, a parent can choose satisfaction A for one of his sons as against satisfaction B for another; and, if he is impartial between them, this should mean that he judges satisfaction A to be the greater. But I do not think we can appeal to this because the parent's choice is not a direct one and, in framing his decision, he is really faced with the very problem that confronts us here. We cannot, therefore, shift our burden upon him. The issue for Welfare Economics is important. For, if the satisfactions of different individuals cannot be compared, a large part of that subject is undermined. We are not, indeed, precluded from saying that, if one person has more of something and nobody else has less of anything, the welfare of the whole group, so long as their desires are unchanged, is increased. But we are precluded from saying anything about the implication of transfers between richer and poorer persons. To ask whether inter-personal comparisons of satisfactions or utilities are in fact possible is thus not an idle question.

Now, if we take random groups of people of the same race and brought up in the same country, we find that in many features that *are* comparable by objective tests they are on the average pretty much alike; and, indeed, for fundamental characters we need not limit ourselves to people of the same race and country. On this basis we are entitled, I submit, to infer by analogy that they are probably pretty much alike in other respects also. In all practical affairs we act on that supposition. We cannot prove that it is true. But we do not need to do so. Nobody can prove that anybody besides himself exists, but, nevertheless, everybody is quite sure of it. We do not, in short, and there is no reason why we should, start from a *tabula rasa,* binding ourselves to hold every opinion which the natural man entertains to be guilty until it is proved innocent. The burden is the other way. To deny this is to wreck, not merely Welfare Economics, but the whole apparatus of practical thought. On the basis of analogy, observation and intercourse, interpersonal comparisons *can,* as I think, properly be made; and, moreover, unless we have a special reason to believe the contrary, a given amount of stuff may be presumed to yield a similar amount of satisfaction, not indeed as between *any* one man and any other, but as between representative members of groups of individuals, such as the citizens of Birmingham and the citizens of Leeds. This is all that we need to allow this branch of Welfare Economics to function. Of course, in working it out, positive conclusions can only be reached subject to

very important qualifications—of which something will have to be said presently.

VI. *Programme*

With this background I shall now review the implications and limitations of two propositions in Welfare Economics, on the assumption that satisfactions or utilities, though not measurable, are comparable in principle and can in fact be compared both intra-personally and inter-personally. The two propositions, put at their crudest, are: first, any additions to the real income of an individual makes satisfaction larger; secondly, transfers of money income from better-to-do people to worse-to-do people make satisfaction larger.

VII. *The First Proposition in a One-Commodity World*

In the conditions supposed the amount of satisfaction that our individual gets depends partly on the state of his desires and partly on how much of the commodity is available to him. If the state of his desires is fixed, it will be generally agreed that in all ordinary circumstances his utility will be greater the more of the commodity that he has. If the state of his desires changes spontaneously, this changing is an additional factor affecting welfare, and nothing can be said about its consequences until the exact nature of the change is known. We rule out, therefore, spontaneous changes in desire attitudes. Our proposition is obviously subject to the condition that such spontaneous changes are excluded. On this basis, if the state of an individual's desires were independent of the amount that he has, nothing further would need to be said. But the amount that he has may react upon and partly determine the state of his desires. What are the implications of this possibility, and in what conditions is it to be expected that these reactions will make our proposition invalid?

It is commonly supposed that, besides more stuff with a given desire attitude entailing more utility, so also does a keener desire attitude with a given quantity of stuff. If this were always so, when an increase of stuff, in the familiar manner of appetite growing with eating, made desire more intense, the increase of stuff would enhance satisfaction in a double way, partly through itself and partly through its effects. In fact, however, enhanced desire with a given quantity of stuff does not necessarily entail more utility or satisfaction. For unsatisfied desire may be painful. If a man with a given income of food per day becomes hungrier, the utility associated with the food he has increases, but the disutility of the food he has not increases too; and the last state of that man may be worse than the first. The ordinary form of diagrammatic analysis fails to bring out this point, though it could easily be

modified so as to make it do so. The point, however, is not, I think, of large practical importance, and, for a broad view, may be left out of account. In general, then, an enhancement of desire increases the utility derived from a given provision of our commodity and a contraction of desire has the opposite effect.

It follows that an increase in the quantity of stuff available, not only when it leaves a man's desire attitude unaltered, but also, *a fortiori,* when it expands it, must entail an increase of utility. But having more of a thing may cause a man's desire attitude towards it to become *less* keen, not more. Or, to put the same thing the other way round, when he has become accustomed to having less he may find himself more happy with any given quantity than he used to be. It may even happen that the total satisfaction he gets from the smaller is as large as what he used to get from the larger quantity.

Thus—for this illustration we may waive the assumptions of one individual and a one-commodity world—consider two undergraduates precisely alike in temperament and constitution. One is poor and goes on a cheap Continental holiday, stopping the night at youth hostels; the other does an exactly similar tour at much greater expense and stopping at luxury hotels. Each of them is conditioned by habit and experience to his circumstances. Is there any reason to suppose that the rich undergraduate has a better time—achieves more utility—than the poor one? Yet again in prewar days well-to-do people had elaborate meals and had a number of servants to work for them. Now they have much simpler meals and do their own work. After they have become accustomed to the new conditions, are they less happy than before? It is very doubtful whether a moderately well-to-do man is appreciably happier now than he would be if transplanted back to the pre-railway age and attuned to the conditions of that age. This is in no way incompatible with a man preferring *at any given moment* to have more rather than less. Nor is it incompatible with the fact that the process of *becoming* better-off often yields satisfaction. In the process there is a prize, and, so far, progress, even among the fairly well-to-do, is not merely illusion. But there is a great deal of illusion about it. From a long-run standpoint, *after incomes in excess of a certain moderate level have been attained,* further increases in it may well not be significant for economic welfare.

The italicised words in that sentence are, of course, vital. What the "certain moderate level of income," to which they refer, is can only be guessed at. My own guess is that, even in this country and most certainly, for example, in Asia, a large number of people have incomes well below it. It follows that over a very wide area, in spite of reactions of having on desiring, having more does in fact entail more satisfaction.

VIII. *The First Proposition in a Many-Commodity World*

Let us now abandon the assumption that real income consists of a single sort of commodity—or of bundles of different commodities in each of which the proportions of these commodities are the same. When we do this it is still possible to say, in a straightforward physical sense, that one real income is larger than another, provided that it contains more of some item and not less of any item. There is, therefore, still meaning in the assertion that, other things being equal, a man's economic welfare is increased if his real income becomes larger; and the discussion of the preceding section remains appropriate without fundamental change.

It may perhaps be suggested that for most practical issues this is good enough, for, while technical knowledge and skill are always going forward in some fields, it is unlikely that they are actually going backwards in any. This may be thought to imply that the representative man's real income is unlikely to expand in some of its parts and at the same time to contract in others. That, however, is wrong. This is immediately obvious as regards agricultural products; some crops will often have a better harvest this year than last, others a worse one. But, over and above that, it is easy to see that, when technique improves as regards some commodity, the quantity of another commodity where it has not improved may not remain stationary, but may fall off. Even when technique has improved in respect of both of two commodities, the output of one of them may fall off. What happens, as a moment's reflection shows, depends on the general conditions of demand. The case, therefore, of some commodities available to our representative man increasing while others decrease is far from being a freak case of no practical importance. On the contrary, it is very important indeed. The relation between alterations of this kind in real income and in economic welfare cannot be ignored.

When this kind of alteration has taken place it is plainly impossible to say in any physical sense that actual real income has become larger or has become smaller. As physical entities the first and second actual real incomes are incommensurable.[3] Fortunately, however, we need not stop here. As was said just now, if a man with given desire attitudes comes to have more of something and not less of anything else, his satisfaction will be increased. Moreover, we may presume, in a general way and subject to qualifications, that, alike before and after a change in his

[3] In the *Economics of Welfare,* I *defined* an increase in actual real income as an alteration in its content such that, with tastes and distribution constant, more satisfaction would be yielded by it after the alteration than before (p. 54). On that basis our problem was to find an *index* of real income changes that would, or probably would, move up or down as real income so defined moved up or down. The problem here is essentially the same, but approached from a different angle.

real income, he will dispose of his purchasing power among different commodities in a way that gives him more satisfaction than he would get from any other disposition. If then the conditions are such that in the new situation he *could* get more income of the old proportionate pattern, or more of some items and not less of any, we may infer that his economic welfare is greater in the new situation than in the old. That is to say, if in the second situation his *potential* real income of the first situation's pattern is greater than his actual real income in the first, we can infer that his utility or satisfaction will be greater in the second situation. *Per contra,* if in the first situation his potential real income (of the second situation's pattern) is greater than the actual real income in the second, his satisfaction will be greater in the first situation.

There is indeed a difficulty. For may it not happen that, not only is the potential real income of the pattern proper to the first situation larger in the second situation than the actual real income of the first situation, but *also* the potential real income of the pattern proper to the second situation is larger in the first situation than the actual real income of the second situation? If this happens, we are forced to the absurd conclusion that our man's aggregate satisfaction is at once greater in the second situation than in the first, and also greater in the first situation than in the second. The emergence of this contradiction proves that the state of things we are supposing cannot exist. If the potential real income of the pattern of the first situation is larger in the second situation than the actual real income of the first situation, it *must* happen that the potential real income of the pattern proper to the second situation is smaller, not larger, in the first situation than the actual real income of the second situation.

This conclusion seems inevitable in logic, but, none the less, unless we can see *how* it comes about that this must happen, we shall be left with the feeling of intellectual discomfort. Why then must it happen? The explanation is that a man's tastes help to determine what his actual real incomes in the two situations are. The discord we have been contemplating is impossible because, though it would occur *if* his actual real incomes were such and such, in fact his tastes, being, on our assumptions, the same in the two situations, *prevent* his actual real incomes from being such and such.[4]

This analysis, it will be observed, does not in all circumstances enable us in principle to decide whether the economic welfare of an

[4] Professor Samuelson's "Evaluation of Real National Income" in *Oxford Economic Papers*, Vol. 2, No. 1 (Jan., 1950), p. 24, when he corrects a mistake in the *Economics of Welfare*.

individual with a given desire attitude is greater in one situation than in another. For it may happen that in each situation his potential real income of the other situation's pattern is *less* than the actual real income of that situation. When this is so, it is easy to see that no inference about his comparative economic welfare in the two situations can be drawn. If this is not obvious immediately, it can easily be made so with the help of algebraic symbols.

IX. *The First Proposition as Regards Groups of People*

Our first proposition when applied to a group of people is obviously subject to all the limitations which we have found to be necessary as regards a single individual. Are there any further limitations?

Suppose first that our group consists of a number of exactly similar persons enjoying identical real incomes and that in consequence of technical advance all these real incomes are increased by equal amounts of some items unaccompanied by a decrease in any others. If people *only* wanted things so as not to be inferior to other people, this development would clearly leave economic welfare unaltered. And no doubt to some extent people do want things for this sort of distinction motive. If it were not for this, it would be difficult for an academic person like myself to conceive how anybody could possibly have ever wanted such things as top hats or frock coats or crinolines or bustles. But it would be absurd to suggest that people *only* want things as a means to distinction. Though, therefore, the economic welfare of groups is not in fact increased by an expansion in real income as much as we should expect it to be if we ignored this characteristic, there is no ground for suggesting that it is not increased at all. So far what is true of individuals is also true of groups.

But in real life changes in technique do not affect all members of a group—a national group for instance—similarly. This opens up new possibilities. Even in a one-commodity world it might happen that a development which increased potential real income as a whole injured particular sections of the group—landlords, for example, or capitalists or wage-earners. If all the persons affected were similar and were initially in receipt of identical incomes, a contraction in the incomes of some might outweigh from the standpoint of welfare a more than equivalent expansion in the incomes of others. With people of different tastes and different initial incomes the same thing is true, and the likelihood of a decrease in aggregate welfare is greater. The change in productivity, since we are supposing it to entail an increase in aggregate income, *could,* of course, be accompanied by a set of transfers—compensations—so arranged that in the final result some persons had more

real income and none had less. In that event aggregate economic welfare *would be* increased. But to say that in that event it *is* increased is, to my mind, to use words in a misleading way. The correct statement is, I think, that the improvement in productivity necessarily entails a *potential* increase in aggregate economic welfare, but does not necessarily entail an actual increase.

In a many-commodity world we saw in Section VII that it is often impossible in principle to say whether or not actual real income has increased between two years, but usually possible to say whether potential real income has. With a single person, we have found that an increase in potential real income over the actual income of an earlier time necessarily entails an increase in economic welfare, provided that the person's desire attitudes are the same before and after the change. With a group within which distribution is different after the change from what it was before, we can only say that an increase in potential real income necessarily entails a potential increase, not an *actual* increase, in economic welfare. If productivity changes make things predominantly consumed by poor persons (or by persons specially keen on those things) more abundant and things predominantly consumed by rich persons (or by persons indifferent to those things) less abundant, aggregate economic welfare may be increased even though aggregate potential real income is diminished; just as in opposite conditions it may be diminished even though aggregate potential real income is increased.

All this is true and from an academic point of view significant. But the paradox that technical advance may for this sort of reason be adverse to welfare is not I think—apart from advance in the machinery of war—significant practically. For our paradox can only become a fact if technical advances that increase potential real income as a whole at the same time damage the relatively poor. But experience hitherto does not suggest that technical advance in fact acts in that way. On the contrary, mechanical improvements are more readily made in respect of mass-produced goods, which poor people predominantly buy, and in transport, which directly or indirectly cheapen poor men's goods in a larger proportion than rich men's goods. As Leroy-Beaulieu observed long ago: "The man of fashion who is fitted for his clothes by a tailor gains nothing from the great reduction of prices which shops selling clothes ready-made offer to the less comfortable section of the population."[5] Moreover, as the history of the motor car, culminating in the petrol driven lorry and motor omnibus, illustrates even those improvements which were originally designed exclusively for

[5] *La Répartition des Richesses*, p. 87.

the luxuries of the rich are apt soon to spread themselves to the comforts of other classes.[6] Nobody, of course, can be certain that the experience of the past will not refute itself in the future. But subject to that general caution we may, I think, feel confident that what was said in the last section about the relation of changes in potential real income to the economic welfare of a single individual is true also without serious limitations of national or other groups.[7]

X. *The Second Proposition*

Let us now pass, once more beginning with the assumption of a one-commodity world, to the second of the two propositions set out in Section VI, namely, that transfers of money income from relatively rich to relatively poor persons increase aggregate satisfaction. In a one-commodity world transfers of money income imply unambiguously transfers of real income. It will not, I think, be disputed that, provided people's desire attitudes are not affected by differences in the size of their incomes, the law of diminishing utility in respect of real income will prevail. It follows immediately that, as between any two people with similar desire attitudes, a transfer of real and so of money income from the better-to-do to the worse-to-do—apart from reactions on real income, of which something will be said presently—increases aggregate satisfaction. Nor does it matter that the rich from whom transfers are made are likely to be much less numerous than the poor by whom they are received. Thus suppose that there is one rich man and ten poor ones.

[6] Compare the *Economics of Welfare*, p. 678 and Marshall's *Principles of Economics*, p. 541.

[7] It seems proper to say a word here about quantity index numbers. These purport to represent variations in "production"—an important part of real income—over a series of years, despite the fact that some items have increased and others diminished; a task that in a physical sense is impossible. Great labour has been expended on the construction of these index numbers, and in political discussions appeal is frequently made to them. A quantity index is usually constructed by weighting the several elements in accordance with the amount of expenditure on them in some base year. If then we suppose that this expenditure is proportionate to the productive power—ambiguities about the definition of productive power being ignored—then employed in producing the several items, if we suppose that tastes (and distributions) have not changed, and if we also suppose that constant returns operate everywhere in both the base year and the year with which a comparison is being made, a quantity index number will show how the quantity of productive resources at work in the aggregate would have had to change, if there had been no change in technique, in order to allow the output actually found in the latter year to be produced. It, therefore, measures, granted constant tastes (and distribution) and constant returns, the proportion in which *potential* output of *the pattern ruling in the base year* is greater or less in the year we are studying than in the base year. This information, resting, as it does, on assumptions that must often depart seriously from the facts, is very different from the precise and definite information which quantity index numbers are popularly supposed to give. The moral is, however, not to leave these investigations unattempted, but to be cautious about the uses to which we put their results.

A pound is taken from the rich man and given to the first poor one. Aggregate satisfaction is increased. But the rich man is still richer than the second poor man. So the transfer of a pound to him again increases aggregate satisfaction. And so on until the originally rich man is no richer than anybody else. What is true of a transfer from one rich man to one poor one is also true of a set of transfers from few rich men to many poor ones.

No doubt at the moment if a rich man accustomed to a high standard of living has £5,000 cut off his income and given to a poor man, the rich man will suffer a good deal, while the poor man may have no idea of what to do with his new-found gains. But it is proper here to take a long-run view and to think of transfers, not as single, casual acts, but as lasting modifications of income distribution. From this standpoint, as we have already argued, cutting down large incomes probably leaves the people whose incomes are cut with substantially as much satisfaction as before, while the poor, whose incomes are increased, gain both directly and also indirectly by having their desire attitudes pushed up. This reasoning will not appeal to anyone who believes that people now rich are different in kind from people now poor, having, in their fundamental nature, greater *capacities* for enjoyment—real high-grade Herrenvolk. For myself, however, I see no reason for believing anything of the sort. If we agree that representative members of the two groups are probably by and large pretty much alike, the argument from the law of diminishing utility holds.

There are also incidental considerations available to support it. Thus it may well be that on the whole, in spite of the pleasure that some people take in contemplating the glories of Royalty and of "high-ups" generally, inequality itself damages happiness. For the odds are that the dwellers in hell are more annoyed at seeing the rich in heaven than the rich are pleased at seeing the poor in hell. To be "all in the same boat" is, for many, a consolation, even though the boat be a leaky one. On the whole then, for a one-commodity world we may feel reasonably confident, apart from possible reactions on potential real income, in this second crude welfare proposition.

In a many-commodity world, as we have seen, it is physically meaningless to say that one real income is larger than another, except in the special case where the one contains more of some commodities and not less of any. In like manner, it is meaningless to say that A is richer than B in respect of real income unless A's income contains more of some kind of commodities and not less of any. In like manner again, we cannot say that real income is transferred from A to B unless some commodities of some kinds are so transferred and none of any kind are transferred the other way. Thus plainly we cannot now appeal to the

law of diminishing utility in respect of real income in the straightforward way that we were able to do in a one-commodity world.

There is, however, a way round. Money income being homogeneous, the law diminishing utility *can,* of course apply to it. If it *does* apply to it, we can infer that transfers of money income from richer people to poorer people of similar desire attitudes increase economic welfare in exactly the same way as we can infer this about transfers in a one-commodity world.

But are we entitled to say that the law of diminishing utility in fact holds of money income? A man does not buy different commodities in the same proportions when he has £100 as when he has £99. We must suppose that he will adjust his expenditure in the optimum manner for each several amount of income and associated set of prices. Hence, to say that the marginal utility of money income to him decreases as its amount increases must mean that the difference of satisfaction yielded by the marginal pound of a hundred pounds expended in the optimum manner is less than that yielded by the marginal pound of ninety-nine pounds so expended. This proposition cannot be derived from the Law of Diminishing Utility in respect of individual commodities. It is a separate proposition. If it is to be accepted, this must be upon broad grounds of experience, reflection and conversation. On these grounds I myself feel reasonably confident that it is true. Granted this, again apart from possible reactions on potential real income, it follows that in a many-commodity world, no less than in a one-commodity world, transfers of money income from the relatively rich to the relatively poor (of similar desire attitudes) will increase economic welfare. This is so in spite of the fact that a large change in the distribution of money income in favour of the poor would probably reduce the volume of saving, thus leading indirectly to a rise in the rate of interest and, through that, to a rise in aggregate money income. So long as potential real income is not also affected, this does not matter. The transfers and their direct consequences are still there, irrespective of the fact that *also* the aggregate number of counters that go to make up money income has been increased.

Our conclusion in this matter is, however, as has already been indicated in cautionary parentheses, subject to a very important limitation. As everybody knows, transfers of money income from the better-to-do to the worse-to-do sections of the community must in practice he accomplished, if they are at all large, with the help of steeply graduated taxes. These are likely in some measure to check effort, enterprise and the development of capital equipment; and so indirectly to reduce potential real income. On the other hand, the fact that the relatively poor are made better off will certainly increase their ability to acquire skill

and to work hard, and *may* also increase their willingness. What will actually happen it is, of course, not possible to guess without a detailed study of the particular circumstances; and very likely not even then. No doubt, our fathers and grandfathers over-emphasized the dark and under-emphasized the bright side of the picture. None the less, it remains true that transfers *may* indirectly damage potential income so much that in the end they make against rather than in favour of economic welfare. Badly constructed schemes for giving poor people a "fairer share" of the national cake *may* even make the cake so much smaller that the absolute amount which they receive is actually reduced. These considerations do not, of course, warrant our standing still and doing nothing at all. But they do suggest that in going forward we should move with reasonable care and probe for hidden minefields.

THE STATE OF WELFARE ECONOMICS*

By TIBOR SCITOVSKY†

Welfare economics is that part of the general body of economic theory which is concerned primarily with policy. Some people would argue that all economics is or should be concerned with policy. Without welfare economics, however, economic theory would be a collection of techniques and the economist would be little more than a technician, a politician's handyman, who has to wait for the latter to state his aims and can merely advise him on how to go about achieving those aims. Welfare economics supplies the economist—and the politician—with standards, at least with some standards, by which to appraise and on the basis of which to formulate policy. Hence, whenever the economist advocates a policy, for example when he favors full employment or opposes governmental interference in economic affairs, he makes a welfare proposition.

In the days of the classical economists, the whole body of economics was "political economy," centered around the welfare problem. Adam Smith defined political economy as a branch of the art of legislation.[1] The utilitarians, too, with their calculus of pleasure and pain, were interested mainly in the establishment of principles that can guide policy. Doubts whether the economist can establish such principles began, however, to arise at the beginning of this century, when we became aware of the insoluble difficulties that beset the economist when he tries to measure and compare different people's utility.

The ordinal nature of utility and the impossibility of interpersonal utility comparisons soon became axioms generally accepted by most people who were concerned with such matters; but the full implications of all this for the usefulness of economics and of economists were not realized for a long time. The Cambridge economists, upholders of the classical tradition, duly noted these difficulties and promptly dismissed them as unimportant. They regarded the attempt to avoid cardinal utility with the use of indifference curves as an ingenious *tour de force* and a plaything of the purist; and they con-

* Paper read in Chicago at a joint session of the American Economic Association and the Econometric Society on December 30, 1950.

† The author is professor of economics at Stanford University.

[1] *Cf.* Adam Smith, *Wealth of Nations,* Book IV, Introduction.

tinued as before to accept the law of diminishing marginal utility and to make the common-sense assumption that by and large different people derive the same satisfaction out of the same income. In the words of Alfred Marshall, "it would naturally be assumed that a shilling's worth of gratification to one Englishman might be taken as equivalent with a shilling's worth to another . . . until cause to the contrary were shown."[2] Here the matter rested, and until about ten years ago most of the important publications on welfare economics, such as Pigou's *Economics of Welfare,* and Kahn's "Ideal Output," continued to come from Cambridge, all based on the postulate of equality; that is, of the equal ability of different people to enjoy themselves.

In the United States, the situation was very similar. Here, the attack on the utility theory came not only along the lines already mentioned but also from those who, like Professor J. M. Clark, called for a theory more firmly based on a study of human psychology. Here too, however, there were a few eminent economists who shared the common-sense views of the Cambridge School and were willing to retain the old utility theory for the sake of its obvious usefulness. Irving Fisher persevered in trying to measure utility. Professor Frank Knight expressed the view that the arguments for progressive taxation and for a greater equality of incomes were too important to be dismissed merely because we had not yet found a way of proving the underlying assumptions.[3] I believe that also Professor Chamberlin felt very much like Knight, at least to judge by his *Theory of Monopolistic Competition,* which was the only important work on welfare economics published on this side of the Atlantic during this period.

The majority of theoretical economists, however, in America, in England, and on the Continent of Europe alike, were fully convinced by the argument that the utility calculus is inadmissible. They were willing to reject the measurability of utility, to refrain from interpersonal comparisons of utility, and to take the consequences—although few of them realized what the full consequences were. These were pointed out in 1932 by Professor Robbins.[4] He maintained that if economics was to have the objectivity of a science, economists may not make interpersonal comparisons and may not, in their capacity as economists, argue for or against any policy or change of policy that would make some people better and others worse off than they were

[2] Alfred Marshall, *Principles of Economics,* 8th edition, p. 130.

[3] Frank H. Knight, "Realism and Relevance in the Theory of Demand," *Jour. Pol. Econ.,* Vol. LII, No. 4 (Dec., 1944), pp. 289-318.

[4] Lionel Robbins, *An Essay on the Nature and Significance of Economic Science* (London, 1932).

before. Considering that practically every economic change favors some and hurts other people, Professor Robbins was, in effect, barring himself and his colleagues from any policy recommendations whatever.

There must have been many economists who disliked these conclusions; but they were unable to refute them. Accordingly, apart from the above-mentioned exceptions, welfare economics ceased to exist at this stage. Students were taught the behavior of the firm under pure and under monopolistic competition; but they were rarely taught what in my opinion is the only justification of even mentioning pure competition, namely that it leads, or would lead, to an efficient allocation of resources and an efficient organization of production. It is highly paradoxical that the theory of allocation under pure competition, which used to be the justification of *laisser faire* in the days of the classical economists, ceased to be part of the curriculum in the 'twenties and 'thirties, and had to take refuge under a pseudonym, as the economic theory of socialism. As is well known, Barone's "The Ministry of Production in the Collectivist State" and Lerner's and Lange's writings on the Economic Theory of Socialism are our main sources for the modern theory of optimum welfare under pure competition; and a recent restatement of this theory by Professor Bergson was published in a paper entitled "Socialist Economics." The reason, of course, for this paradoxical state of affairs is that apart from the Cambridge economists, only the socialist writers and writers on socialism could accept, without further ado, the postulate that men are equal in their ability to enjoy life. Most other economists studiously avoided the subject of welfare economics as unscientific; and, for the sake of maintaining their status as scientists, they were willing to become technicians, concerned solely with observation, description, classification, and the collection of data. If most of them nevertheless continued to praise competition, to condemn tariffs, or to advocate a neutral monetary policy, they did so out of sheer habit, not realizing that if economists are to refrain from interpersonal comparisons of utility, they may not express a preference between monopoly and competition, protectionism and free trade, or inflation and price stability.

The reaction to this state of affairs came in the late 'thirties. Frustrated by their inability to answer the pressing questions posed by the depression, and realizing that Keynes' *General Theory* provided them with the answers, or at least with some of the answers sought, many economists seemed to throw scientic objectivity to the winds in their desire to render themselves useful. The choice between prosperity and depression, between a high and a low national output seemed so obvious and so easy to make that few if any economists stopped to ask themselves whether they had made their choice on objective and

purely scientific grounds. A whole new generation of economists, and many members of the old, wholeheartedly advocated full employment, full-employment output, and policies aimed at maintaining full employment. Here then, in a way, was a rebirth of welfare economics; and few of Keynes' pupils and followers worried over any possible loss in their status as scientists that their policy recommendations might involve.

It is well to remember, however, that there was such a loss, at least by the standards established by Professor Robbins. For a comparison of the relative merits of prosperity and depression does involve an interpersonal comparison of utilities. The overwhelming majority of people may be better off in times of prosperity; but there are some, however few, who live on fixed incomes or accumulated savings, and who, in depression, can "pick up bargains," as one economist has put it, that are not available to them in times of prosperity. The economist, therefore, who favors prosperity and advocates a policy of full employment makes an implicit value judgment. He implies that the gain of those millions who benefit by prosperity is in some sense greater or more important than the loss of real income suffered by those few whose money incomes are fixed.

Strictly speaking, such an assumption is not objective and not scientific. Nevertheless, most people feel instinctively that it is right. This fact explains why most economists were undaunted in their advocacy of a high level of income and employment; and it also explains, I believe, the recent revival of interest in welfare economics and the re-examination of its foundations.

The new discussion of the basis of welfare economics was opened in 1938, significantly enough by a pupil of Keynes, Mr. Harrod. He stated, and I quote, "If the incomparability of utility to different individuals is strictly pressed, not only are the prescriptions of the welfare school ruled out, but all prescriptions whatever. The economist as an adviser is completely stultified, and . . . he had better be suppressed completely. No,"—Harrod protests—"some sort of postulate of equality has to be assumed. But it should be carefully framed and used with great caution."[5] In other words, Harrod felt that without welfare economics, the economist would be completely useless and without function in society. He was willing therefore to follow in the path of the Cambridge school, to relinquish the economist's claim to scientific objectivity, and to let him assume the equality of man for the sake of maintaining his usefulness as an adviser and policy maker. I believe that the person who came the nearest to carrying out what

[5] R. F. Harrod, "Scope and Method of Economics," *Econ. Jour.*, Vol. XLVIII, No. 191 (Sept., 1938), p. 397.

Harrod advocated was Professor Abba Lerner. Standing very close to the Cambridge school, he maintained throughout an active interest in welfare economics; and he tried, in his *Economics of Control,* to justify the assumption of equality on a probability basis. Professor Friedman, however, in his review of Lerner's book,[6] has shown that this attempt was not altogether satisfactory.

At the same time that Harrod advocated a cautious return to the postulates of the classical and neo-classical economists, there arose two new schools of thought that tried, each independently of the other, to restore the economist to his position of policy maker without the necessity of assuming the equal ability of different people to enjoy life.

The first of these schools is associated with the names of Kaldor, Hicks, and Hotelling, and is generally called the new welfare economics. The second school, which is associated with the names of Bergson and Samuelson, has developed the concept of the social welfare function.

The New Welfare Economics

The new welfare economists, despite their name, actually said little that was new. They accepted the usual simplifying assumptions of Pareto and Barone: to wit, the independence of different people's satisfactions and the absence of external economies and diseconomies. On these assumptions, they were able to segregate the conditions of optimum welfare into two groups and deal with them separately under the headings of efficiency and equity. This device was already known to Pareto but was more fully developed and explicitly stated by Lange.[7] Since virtually all changes in economic policy or institutions affect both the efficiency of the economic system and the distribution of welfare it gives rise to, one would think that all economic changes ought to be judged by standards both of efficiency and of equity. The new welfare economists, however, maintained and set out to show that the economist is justified in making policy recommendations on the basis of efficiency considerations alone. Their critics, notably Professor Samuelson and Mr. Little, argued that they failed in this attempt. In my opinion, this criticism is not wholly justified; and it will be well therefore to restate the arguments of the new welfare economists.

To prove their point, the new welfare economists have advanced two arguments, which are really separate and different from each other, although their authors do not seem to have been aware of this fact. One of these arguments does not, in my opinion, stand up under scrutiny; but the other is valid, at least if certain special institutional

[6] *Cf. Journal of Political Economy,* Vol. LV, No. 5 (Oct., 1947), pp. 409-11.

[7] Oscar Lange, "The Foundations of Welfare Economics," *Econometrica,* Vol. 10 (July-Oct., 1942), pp. 215-28.

conditions are fulfilled. The first argument is usually attributed to Dr. Hicks, although it was first and most rigorously stated by Professor Hotelling. In a 1938 article in *Econometrica,* Professor Hotelling raised the question whether it would not be better to pay for the construction of bridges and tunnels, and for public utilities at large, out of general taxation rather than out of tolls and rates levied on the users of public utilities.[8] He recalled Pareto's definition of an efficient economic organization, under which no one could be made better off without making someone else worse off. Any change in policy or institutions, therefore, that improved efficiency could, if accompanied by an appropriate system of compensations and collections, render everyone better off than he was before. Hotelling believed that "such adjustments would not in fact be made; that the general well-being would be purchased at the expense of sacrifices by some; and that it is unjust that some should gain at the expense of others, even when the gain is large and the cost small."[9] Nevertheless, Hotelling felt that in the case he was considering, the economist was justified in making policy recommendations and basing these recommendations on the criterion of efficiency alone. For he conceived of economic policy in this field as a succession of many small changes, each of which would bring the system closer to perfect efficiency, and each of which would redistribute welfare in a random fashion. If this were so, the successive redistributions would cancel each other out and leave the improvement in efficiency as the net result, so that everybody would be better off in the end. Bearing in mind that Hotelling was concerned not with economic policy at large but with a rather restricted and special problem, his assumptions and conclusions can probably be accepted.

Doubts as to the validity of Hotelling's argument arise only when it is elevated into a general principle and made applicable to all economic policy recommendations. This is what Dr. Hicks has done. His argument, in his own words, runs as follows. "If a community were organized on the principle of making all alterations which were improvements [in the efficiency sense], then, although we could not say that all the inhabitants of that community would be necessarily better off than they would have been if the community had been organized on some different principle, nevertheless there would be a strong probability that almost all of them would be better off after the lapse of a sufficient length of time."[10] On the strength of this argument, Hicks maintains that economists can and should make policy recom-

[8] Harold Hotelling, "The General Welfare in Relation to the Problems of Taxation and of Railway and Utility Rates," *Econometrica*, Vol. 6 (July, 1938), pp. 242-69.

[9] *Op. cit.*, p. 258.

[10] J. R. Hicks, "The Rehabilitation of Consumer's Surplus," *Rev. Econ. Stud.*, Vol. VIII, No. 2 (Feb., 1941), p. 111.

mendations on the basis of efficiency considerations alone. This attitude has been criticized, correctly I believe, by Mr. Little. He points out that some economic changes may occasion major changes in distribution, that we cannot prove the randomness of different redistributions; and that for both these reasons we cannot expect successive redistributions of welfare to cancel out and offset each other. Accordingly, Mr. Little concludes that Hicks is wrong in urging the economist to ignore the problem of distribution and base his recommendations on efficiency considerations alone.[11]

Having examined and rejected one of the arguments of the new welfare economists, we can now turn to the second argument, which has been advanced by Mr. Kaldor.[12] Kaldor believes, just like Hicks, though for different reasons, that the economist should favor all changes in economic policy that improve the efficiency of the economic system, even when they inflict losses upon some people and independently of whether or not these people are compensated for their lossses out of the gainers' gains. Kaldor seems to think of every decision affecting economic policy as consisting of two parts: the economic decision whether or not to make the change itself, and the political decision whether or not to compensate the losers in case the change in policy is made and inflicts losses on some people. He advocates that the economist should take an active part in making the first part of this decision and base his recommendations on efficiency considerations alone, because, according to Kaldor, the economist can rely on others to take care of the distributive aspects of the problem. If I interpret Kaldor correctly, he has in mind a community whose political representatives are fully conscious of the problem of distribution and are willing to take full responsibility for maintaining an equitable distribution of income. In such a community, the economist can make policy recommendations on the basis of efficiency considerations alone, because he can rest assured that if his recommendations are followed and result in a redistribution of income which the community considers undesirable, this will be corrected as a matter of course through a system of compensations. In other words, the economist can forget about the problem of distribution, provided that others are willing to take care of it.

This is likely to be the case in a socialist economy; and generally in an economy where the public regulation of economic affairs and public responsibility for a satisfactory distribution of income are the

[11] I. M. D. Little, *A Critique of Welfare Economics* (Oxford, 1950), Chap. VI.

[12] Nicholas Kaldor, "Welfare Propositions of Economics and Interpersonal Comparisons of Utility," *Econ. Jour.*, Vol. XLIX (Sept., 1939), pp. 549-52. It is worth noting that Hicks has endorsed Kaldor's argument in his "The Foundations of Welfare Economics," *Econ. Jour.*, Vol. XLIX (Dec., 1939), pp. 696-712. The position, however, that Hicks took in the later article cited above suggests strongly that he was not aware of the difference between Kaldor's argument and his own.

rule rather than the exception. It may well be that the England of today is such a community; and that in England, therefore, economists can concentrate on the improvement of efficiency and rely on parliament to take care of the maintenance of equity. Kaldor's argument, however, has no universal validity. I doubt for example if it could be applied in the United States or in the England of the time when Kaldor's article was written. This is not to imply that Congress or Parliament in the free enterprise economy is not concerned with the equity of income distribution. Progressive taxation and social insurance testify to the contrary. Nevertheless, there is a presumption in the free enterprise economy against the State correcting the income distribution brought about by the market mechanism. This militates against any economic policy that would have to be accompanied by a payment of subsidies or compensations. In other words, the effects of an economic policy on efficiency on the one hand and on income distribution on the other hand cannot—as a rule—be separated in a free enterprise economy, because in such an economy compensation payments are not feasible politically. This implies that in the free enterprise economy all economic policies must be appraised by their effects on efficiency and equity simultaneously; and no recommendations can be made on the basis of one of these criteria alone. I would conclude, therefore, that while the new welfare economics has, in Kaldor's argument, provided the economist with a guide to policy in some communities, this guide has no universal validity and provides no basis on which for example we, in the United States, could make policy recommendations.

Before proceeding, I want to mention in passing another criticism that has been levelled against the new welfare economics. This criticism has to do with Kaldor's compensation principle. According to this principle, the test of increased efficiency is that the gainers from a change can more than compensate the losers. This is a very simple test; but there are two objections to its use. One is that the compensation principle makes use of the consumer's surplus concept. Professor Samuelson has argued that this is so treacherous a tool that it is better not to use it, especially since there exist other and more satisfactory tools that serve the same purpose.[13] The other objection is that in certain exceptional cases it is impossible to decide which of two alternative situations is more efficient; and one may get the paradoxical result that each situation is more efficient than the other. This objection, which I raised in 1941,[14] applies equally to the compensation principle and

[13] Paul Samuelson, *The Foundations of Economic Analysis* (Cambridge, Mass., 1947), pp. 195 ff.

[14] Tibor Scitovsky, "A Note on Welfare Propositions in Economics," *Rev. Econ. Stud.*, Vol. IX, No. 1 (Nov., 1941), pp. 77-88.

to any other test of efficiency; but it probably is not very important. For the paradoxical result cannot arise in a closed economy, so that the objection applies only to certain welfare propositions in the theory of international trade. This fact was stressed in my 1941 *Note;* it was lost sight of in the ensuing discussion; and only recently was it restated and proved rigorously by Graaff.[15] I believe that Graaff's article should have cleared up and put an end to this particular controversy.

The Social Welfare Function

Let us examine next the other new approach to welfare economics, that of Professor Bergson,[16] which has been endorsed and further developed by Professors Samuelson and Tintner. Bergson defines a social welfare function, which may be regarded as a function either of the welfare of each member of the community or of the quantities of products consumed and services rendered by each member of the community. This social welfare function is completely general. It can take into account external economies and diseconomies as well as the dependence of one person's satisfaction on other people's welfare. In fact, the social welfare function, as Bergson defines it, is so completely general that it is impossible to tell, on the basis of internal evidence alone, what use Bergson wanted to make of it. It may be that he aimed merely at a formal and rigorous restatement of the main problems of welfare economics. If so, he certainly has clarified the issues and facilitated further work in the field. Bergson's work, however, has been hailed as a major contribution to welfare economics on the basis, I believe, of a more positive interpretation of it. Accordingly, I too shall put this interpretation on Bergson's social welfare function and appraise it on this basis.

The social welfare function can be thought of as a function of each individual's welfare, which in turn depends both on his personal well-being and on his appraisal of the distribution of welfare among all members of the community. It would seem therefore as though the social welfare function would solve the fundamental problem of welfare economics and make it unnecessary for the economist to decide what is a desirable distribution of welfare. For the social welfare function is a kind of collective utility function, which expresses everybody's preferences relating not only to his personal satisfaction but also to the state of the entire community and to the distribution of welfare among the members of the community. Hence, one might think that the

[15] J. de V. Graaff, "On Optimum Tariff Structures," *Rev. Econ. Stud.*, Vol. XVII (1), No. 42 (1949-50), pp. 47-59.

[16] A. Bergson, "A Reformulation of Certain Aspects of Welfare Economics," *Quart. Jour. Econ.*, Vol. LII, No. 4 (Feb., 1938), pp. 310-34.

economist could concentrate on stating the conditions that would maximize the social welfare function and on advocating the economic policy that would bring about these conditions; and that he could rest assured that this would bring about the economic system that conforms most closely and in every respect to the preferences of the community.

Unfortunately, however, the social welfare function so interpreted has not, or at least not yet, fulfilled the hopes that it seemed at first sight to have held out. For the construction of a social welfare function raises two very serious problems. One is the problem of specifying the shape of the social welfare function and its exact dependence on the welfare of each individual. At first sight, the use of the social welfare function would seem to relieve the economist from the necessity of making any value judgment at all. It looks as though he would not need to decide what is the most desirable distribution of welfare, because the social welfare function itself expresses the community's opinion on this subject. All that the economist would have to do therefore would be to see to it that the actual distribution of welfare conforms to society's preferences as expressed by the social welfare function.

The problem, however, is not quite so simple as this. For the shape of the social welfare function must somehow be determined; and this, to put it crudely, amounts to determining the relative weights attached to each individual's preferences when these are aggregated into the social preference function. Should everybody's preferences be given equal weight, or, if not, on what principle should different weights be allotted to different people's preferences? Most people would probably feel instinctively that everybody should be given an equal vote; but let us remember that it was the same instinct that led earlier generations of economists to give equal weights to different people's satisfactions. Do we stand on surer ground when we give people equal votes than did the classical economists when they assumed that everybody has the same ability to enjoy life? I doubt it. But even if we did, to determine the shape of the social welfare function would still involve a value judgment, which presumably would have to be made by the economist. It appears therefore that the introduction of the social welfare function has not really solved the economist's problem. It has indeed taken off his shoulders the responsibility for attaching weights to different people's satisfactions or welfare; but it has imposed upon him the new and very similar responsibility of attaching weights to different people's opinions and preferences.

Furthermore, there is also a second objection to the use of the social welfare function, which has been pointed out by Professor Arrow.[17]

[17] Arrow's work on this subject has appeared in several forms and in several places. For the simplest formulation of his contribution see Kenneth Arrow, "A Difficulty in the Concept of Social Welfare," *Jour. Pol. Econ.*, Vol. LVIII, No. 4 (Aug., 1950), pp. 328-46.

He has shown that if a choice is to be made from among more than two alternatives, we cannot, in general, construct a social welfare function that could be regarded as a true representation of individual preferences and would at the same time lead to a consistent and non-contradictory social ordering of all available alternatives. By a true representation of individual preferences is meant, in this context, a social ordering that is positively correlated with individual preferences, one that is independent of the presence or absence of irrelevant alternatives, and one that is determined neither by the wishes of a dictator nor by mere convention or tradition alone. In short, Arrow shows that we cannot, in general, construct a social welfare function in a way that fulfills the above simple and reasonable requirements without getting involved in a contradiction.

It would take too long to reproduce Arrow's argument; but I will reproduce a simple example he gives. Imagine a community of three people, X, Y, and Z, who have to choose from among three alternative social policies, A, B, and C. X prefers A to B, B to C, and hence also A to C. Y prefers B to C, C to A, and hence also B to A. Z prefers C to A, A to B, and hence also C to B. If we then give each person's preferences equal weights, we can try to construct a social preference function on the basis of majority rule. Since two out of three people prefer A to B, we have a social preference for A over B. On the same basis there is a social preference also for B over C. From this it follows that there must also be a social preference for A over C. But two out of three people prefer C to A, so that there is a social preference also for C and A. Hence, majority rule in this example leads to a contradictory social preference function.

Arrow's objection does not rule out altogether the use of the social welfare function. It only demonstrates the limitations of the approach. His work can be regarded as a rigorous proof of a truth that has been known for a long time; namely, that democratic procedure does not always work. Further research in this field therefore will have to concentrate on finding the special conditions under which a non-contradictory and meaningful social welfare function can be constructed; or in other words, under which democratic procedure can function.

Some work along these lines has already been done in the field of political theory by Mr. Duncan Black of Glasgow University.[18] He has shown that the political preferences of a group, as expressed in the passing of a bill or the election of a candidate, can always be said to represent, in a meaningful sense, the preferences of the members of

[18] Duncan Black, "The Rationale of Group Decision-Making," *Jour. Pol. Econ.*, Vol. LVI, No. 1 (Feb., 1948), pp. 23-34; and also his "The Decisions of a Committee Using a Special Majority," *Econometrica*, Vol. 16, No. 3 (July, 1948), pp. 245-61.

the group, provided that the alternatives from among which choice is made can be ordered along a (one-dimensional) scale from, say, left to right, and provided that all the members of the group, while they may differ in their preferences, agree on the order in which the alternatives are arranged from left to right.

These conditions, for instance, would rule out Arrow's example. Think of A as a leftist policy, B as a middle-of-the-road policy, and C as a rightist policy. Then X is a leftist, Y is a middle-of-the-roader; but there is something wrong with Z. His first choice indeed is the rightist policy C; but his second choice, A, violates Black's conditions. For Black would have a rightist person take the middle-of-the-road policy as his second choice; and in that case, of course, Arrow's contradictory result would not arise.

It so happens that in the political sphere the above condition is quite often satisfied, although there are some conspicuous instances in recent history when it was not satisfied. The obvious example is the "tactical" alliance in Germany between communists and nazis shortly before Hitler's accession to power, with its disastrous results.

In the economic field, the available alternatives cannot as a rule be reduced to a one-dimensional ordering; and in this field therefore the restriction to be imposed for ensuring the existence of a meaningful social welfare function will probably have to be of an entirely different nature. As far as I am aware, no work has been done as yet to discover what these minimum restrictions are. One can only guess that some minimum degree of agreement and uniformity of preferences will be required to ensure the existence of a social welfare function in the economic sphere.

The Emergence of a Constructive Theory of Welfare Economics

So far, then, the outlook seems rather bleak. Neither the new welfare economics nor the social welfare function has provided the economist with an answer to his dilemma. But the situation is not quite so bad. Arrow's criticism of the social welfare function and Black's work in the political sphere have at least pointed the way along which constructive work in this field will have to be done. As to the new welfare economics, its discussion by sympathetic critics and by critical sympathizers has already yielded some constructive results. Most of these have to be found in reading between the lines; but some of them are contained in Little's *Critique of Welfare Economics*.

One definite conclusion that has emerged from the welfare controversy is that while in some cases and in some communities the economist can make policy recommendations on efficiency grounds alone, in our society he cannot usually do so but must take into account also

considerations of distribution and equity. When he does so, the economist necessarily introduces a value judgment into his recommendations. In our society, therefore, the economist must make a choice. If he wants to maintain strict objectivity, he becomes a technician; if he wants to advise on policy, he must in most cases relinquish his claim to the objectivity of a natural scientist.

My feeling is that most economists who choose the latter rôle are not unduly disturbed by the price they have to pay for their position as advisers. After all, it is the function of social science to make judgments and recommendations on the distribution of welfare; and not only is the economist a social scientist, he is probably the best qualified among social scientists to deal with this subject.

But if the economist takes it upon himself to make policy recommendations, and does so, as indeed he must, on the basis of both efficiency and equity considerations, it is essential that he should be fully conscious of this fact, and that when he makes his recommendations he should make it absolutely clear and explicit on what basis he has arrived at them.

Needless to say, if the economist's recommendations are to command assent, his judgment on equity must conform to the judgment of public opinion. For example, when economists advocate the maintenance of full employment or of price stability, their recommendations carry weight, because their implied judgment on equity coincides with that of public opinion. Nevertheless, the economist cannot disclaim responsibility for having made a value judgment on the ground that he was only interpreting the preferences of society as a whole. For to begin with, in so arguing he would make the implicit value judgment that the majority opinion fully represents and should determine society's preferences. Secondly, as Arrow has shown, society's preferences may be inconsistent and contradictory; and in such cases they can certainly not serve as a guide for the economist to follow. Thirdly, there probably exist wide areas of choice where a judgment must be made but where the majority of people are unable to make a judgment because they are ill-equipped for it.

For all these reasons, the economist must make his own judgment and assume full responsibility for it. He may not be able to go against public opinion; but he must lead rather than interpret it. This, I am afraid, is a very commonplace conclusion to end with; but it is, I believe, the only conclusion to be drawn from the current controversy on welfare economics.

SOME NOTES ON MR. HICKS AND HISTORY

By W. W. Rostow*

A considerable portion of the current effort of economic theorists is being brought to bear on the relationship between short-run fluctuations in income, output, and employment, on the one hand, and the rate of economic progress, on the other. This effort clearly brings the historian and the theorist closer to a common perspective on the economic process, for the economic historian has hitherto mainly concerned himself with a more or less purposeful description and analysis of the sequence of economic development in various regions. The present note constitutes a few interim observations on the theoretical structure which has thus far emerged. Its purpose is to suggest the possibility of certain refinements and elaborations in the existing models and to focus the attention of historians and other empirical investigators on certain problems of fact whose solution may assist the elaboration of an improved theoretical framework for the understanding of the growth and fluctuations of economies. This note is organized as a series of discrete comments on the model presented by Mr. J. R. Hicks in *A Contribution to the Theory of Trade Cycle.*[1] As Mr. Hicks has underlined, his study is part of a growing stream of concepts and speculation. Nevertheless, his formulation is a convenient point of departure.

Fluctuations in Mr. Hicks's system reflect levels of total investment which are inappropriate to the long-run rate of increase of output, in a progressive economy. These inappropriate fluctuations in total investment result from the interplay of the multiplier and the accelerator, when their values are taken at certain levels. In his view, it is likely that the levels of investment induced by a rise in income will yield a spiral of investment and income increases which the system will reject as inappropriate. The form of that rejection is an upper turning point and downward spiral in output initiated by the existence of bottlenecks in capacity which throttle the increase in output and, through the accelerator, lower investment, income and, in turn, investment.

* The author is associate professor of economic history at the Massachusetts Institute of Technology.

[1] Oxford, 1950.

To an historian a striking divergence between this model and the life of economies is that the model fails to take account of and to explain a fundamental characteristic of the history of new investment; namely, that investment has varied in its composition over time and that each trade expansion is characterized, and even dominated by, certain leading types of new investment. There is, of course, within the boom a generalized expansion of new investment, despite the fact that certain types of investment, of expected low yield, may be diminished. Nevertheless, a theory relating the business cycle to the course of economic progress should offer some explanation for the tendency of the composition of new investment to alter; for economic progress has consisted, in large part, of leading bursts of investment, in different directions, in the course of successive cycles, and the secondary consequences of such bursts.

Briefly, the sort of model which would better suit the historian is one in which there was not simply a single ceiling of capacity (like Mr. Hicks's F curve); but, related to such a curve, there was a complex of curves, each indicating an optimum course for output and capacity in different sectors of the economy.[2]

The determinants of these sub-curves would be, essentially, two: (a) the level of demand for particular commodities and services as determined by the growth in population and income (adjusted for changes in taste); and (b) the technical potentialities in each branch of economic activity. There are few difficulties in conception with respect to (a). One can envision a level of wheat acreage and production, cotton acreage and production, coal output, and even forms of industrial plant and transport facilities which would be appropriate to the long-run rate of growth at constant levels of techniques. With respect to technical possibilities, however, it seems likely that a theory of progress will have to look at invention and innovation in a somewhat different way than is now usual. Current theory tends to take invention as a factor outside its system of thought. Thus, in Mr. Hicks, the distinction between autonomous and induced investment. Industrial invention, or better, the application to industry of new technical possibilities is better regarded as a flow, the size of which is a function of certain mixed economic and social variables in a society, the direction of which, in substantial part (but not exclusively), is determined by recognizable economic incentives.

The amount of its talent which a society devotes to science and the application of science to industry, and the eagerness of entrepreneurs

[2] These curves would conform more nearly to a complex of Mr. Harrod's Gn curves than to Mr. Hick's F line. R. F. Harrod, *Towards a Dynamic Economics* (London, 1948), pp. 87 ff.

to seize upon such possibilities and apply them reflect the whole temper of a society at particular periods.[3] It is not difficult to recall countries in which the flow (*e.g.*, British *vis-à-vis* France, from 1815 to 1848)[4] is high relative to other countries at the same time; or to chart within countries alterations in the size of this flow from period to period (*e.g.*, Britain from 1873 to 1896 *vis-à-vis* Britain in the pre-1914 years). The fact that such a flow may not be, strictly speaking, measurable should not discourage the introduction of some such concept. This is only one of the fundamental factors determining the rate of economic development, the roots of which must be found in social factors difficult or impossible to measure. As for the direction which industrial inventiveness takes and the directions in which it is applied, we can look in substantial part, to recognizable economic inducements. There may be in the productive process, within a given industry or within the economy as a whole, a flagrant lack of balance, perhaps, induced by a higher degree mechanization in one stage of the productive process than another.[5] Such a lack of balance will set up a strong incentive for inventive talent to concentrate on the problem of evening up the level of technique. The eagerness with which entrepreneurs seize upon and apply the new potentialities is also a function of recognizable economic incentives, related among other factors, to the stage and rate of growth of the industry. The incentive may be strong not only at a period of rapid rate of growth; falling prices in agriculture, for example, appear to have induced the application of improved techniques at various stages over the past century. Even public investment, which is treated by Mr. Hicks as autonomous, has, in the past, in large part reflected the demand for basic public utilities and services which were, in turn, largely a function of population and income growth. In short,

[3] Similar factors must be invoked to account for the quality of the working force coming forward, changes in birth rates, changes in the political environment of the economy, etc. It would be helpful to much general historical and social research going forward if economists were to define with precision the social variables they would wish to see investigated, and to leave explicit place for such social variables in the slope and contour of the lines of growth they tend to draw in their models. Similarly, a conscious effort should be made by historians and other social investigators to make their empirical research bear directly on the factors relevant to economic development.

[4] In effect, there are two flows here, related but at times useful to distinguish: the flow of new potentialities, issuing from industrial and scientific laboratories and less highly organized men of ingenuity; and the actual flow of such potentialities into economic practice. There may be cases where the propensity to invent is high, the propensity to apply is low, and *vice versa.*

[5] See, for classical examples, T. S. Ashton, *The Industrial Revolution, 1760-1830* (London, 1948), pp. 91-92. For short-period variations in the demand for invention in relation to supply compare Ashton's series for the number of British patents with the trade cycle pattern from 1790 to 1830 (Table 1, p. 229, "Some Statistics of the Industrial Revolution in Britain," *The Manchester School,* May 1948.)

it seems possible and useful to narrow the range accorded to autonomous investment and to treat the flow of applied technical possibilities as a function of the social and economic state of a society, and its character as mainly related to economic incentives. From the whole potential flow in each cycle, the investors (capital market, agriculture, and industry) select those which appear most profitable.

One is, nevertheless, left with several forms of investment which might be regarded, still, as autonomous; investment in wars; conscious counter-cyclical government investment; investment in technical possibilities opened up by random discoveries not related to clear-cut prior economic inducements; investments in the mining of precious metals, induced by adventitious discoveries.[6]

Long-run equilibrium could thus be represented by an over-all optimum rate of growth in output, with sub-levels indicating the appropriate level of output in different sectors of the economy, with a margin left for distortions and odd events.

What a theory of the trade cycle in relation to this kind of model must take into account is the fact that: (a) investment in these various sectors of the economy has proceeded at irregular and disjointed rates, fluctuating, in effect, above and below the abstract "optima";[7] and (b) that cycles in the past have been characterized, or even dominated, by disproportionate investment in certain directions, as opposed to others. Not only has investment in general been disjointed, which is the basis for Hicks's and other models, but investment has been disproportionate in various sectors of the economy.[8]

The leading directions of new investment in each boom can in large part be related to disequilibria as between the optimum rates of growth in certain sectors and the levels of capacity existing just prior to the boom; for example, the world-wide boom of the 1830's in substantial part (but not exclusively) had as its focus, a falling behind in raw cotton production in relation to the industrial demand for raw

[6] There is some doubt as to whether the latter two forms of investment should be regarded as autonomous; for, although the invention or discovery may not be the result of an accretion of efforts induced by evident economic requirements, their selection for exploitation as opposed to other avenues for investment, is part of the economic process.

[7] Further reflection and investigation might well indicate that the optimum complex of growth curves assuming continuous full employment and appropriate investment was higher than the *ex post* trend lines we can draw from the performance of an economic system subject to fluctuations in employment and investment following patterns which are inappropriate in their composition. The "optima" referred to here are empirical, *ex post* optima, rather than the equilibrium "optima" referred to above.

[8] In this context the disproportion would consist in higher levels of investment in certain sectors than the proportion decreed by the optimum pattern of development. Appropriate investment need not be proportionate to the percentage net contribution of each sector to the national income.

cotton. This took the form in the early 'thirties, of a rising price for cotton and falling cotton stocks in the textile manufacturing regions of the world; and it was followed by a massive land boom, with accompanying transport development. The American land boom (induced by forces wider than the cotton price) was the center of world-wide boom, although the forms of investment pursued in its course were more general.

One can find other booms where relative price movements presented inducements to expand wheat acreage, wool production, meat production, coal production, and so forth; and where the character of investment in the boom reflects a prior disequilibrium in one or more particular sectors of the world economy. One can deal similarly with booms where the central phenomenon is investment in a new industry, involving the exploitation of technical potentialities. Here the form of inducement may not be a rising price but the possibility of lower costs in the face of a constant or even falling price.

A second empirical fact which must be introduced into a satisfactory theoretical model is the persistent tendency for the expansion in capacity in the leading sectors to be carried too far, yielding, toward the end of the boom, a conscious prospect of a level of capacity higher than that which would be required in those particular sectors of the economy in terms of the optimum model. To explain this phenomenon one cannot evade an evocation of the institutional setting for new investment.

The major lines of new investment were (over, say, the past 150 years) mainly determined by the actions of individuals and private institutions; but they were not atomistically determined. In the long-term capital markets, and even in the larger industries, those responsible for investment were operating off common information and common stimuli. They received and exchanged (perhaps over lunch) the same rumors and news. They watched and were influenced by the same set of market phenomena, the same kinds of leadership. These determined a common view of the expected level of profitability in certain lines of new investment. Thus, those making investment decisions tended to move together.

And to explain the classical "manias" which characterized many booms one must, in effect, invoke some version of social phychology. For the flagrant characteristic of the latter stages of many business expansions was the expectation of extremely high yields in particular directions; *i.e.*, demands for capital which were high and inelastic, and out of accord with the real possibilities for future yield, given the volume of investment in fact going forward in those lines and the whole optimum course of economic development: *e.g.*, Latin American

mining shares (1825); American state bonds and cotton land (1836); British railways (1845); and so on.

A third factor which clearly influenced the extent to which investment distortion proceeded in each boom was the period of gestation of the leading forms of investment. In an inventory cycle in cotton goods exports, for example, the time lags were short and the fluctuations of production about an optimum level were relatively shallow. In a boom directed mainly to domestic industrial expansion one would also expect the true profitability of the current rate of expansion in capacity to reveal itself in a reasonably short period. Excepting war booms, the most powerful and prolonged expansions, marked by a sustained rise in the level of money wages, have been expansions associated with the move into new territory (including the laying of railways and the building of new towns) where the period of gestation was relatively long and high hopes could be sustained for considerable periods of time, even in the face of rising costs (*vide*, expansions reaching peaks, for United Kingdom, in 1836, 1854, 1872).

The introduction of these factors into Mr. Hicks's model may have certain consequences for the theory of the upper turning point of the trade cycle. Mr. Hicks's model is set out in real as opposed to money terms. It is also set out in terms of macro-concepts which do not center on the motivations and the market position of the individual investor. The down-turn comes when a limitation on capacity prevents further rise in output, thus bringing to a halt the expansive operation of the accelerator. This is probably to be translated into the view that a rise in the cost of new investment (including, perhaps rises in interest rates)[9] produces a fall in the expected yield from current investment

[9] In passing, the author must, reluctantly, deny himself the immortality of a "Rostow paradox" (Hicks, *op. cit.*, p. 154 n.). The author's conclusion that expansions in the Great Depression period (or the period 1815-48) were not cut short by abnormal monetary stringency is not dependent on a comparison of average rates of interest as between the Great Depression and the mid-century decades. It is based, rather, on the view that the character of the booms throughout the nineteenth century was determined primarily by the character of new investment; that is, by factors on the demand rather than the supply side of the market for loanable funds. This would not exclude the possibility of a change in expectations concerning the main lines of new investment affecting simultaneously both supply and demand conditions in the money and capital market. The author's second judgment in this matter is that, of its nature, the decline in prices and interest rates was not the trend result of a succession of abortive expansions, but the consequence of a world-wide structural adjustment. In this perspective, there is no paradox: changes in the character of new enterprise can account for both differences in the nature of the boom and the character of the persisting trends in prices and rates of interest. A close examination of the history of the money market in relation to new investment simply does not appear to justify a very large place for movements on the supply side of the market in determining either the power of booms or the character of trends. It is on this direct reading of the evidence, rather than a *prima facie* argument drawn from a comparison of interest rates in different periods that the author's by no means unchallengeable view is based. The

and thus a decline in the volume of new investment. Alternatively, it could be interpreted as reflecting an absolute decline in new orders to the investment goods industries caused by a failure of total output to expand at its previous rate.[10]

There seems little doubt that rises in costs have played a part in producing a revision of the expected profitability of new investment in the latter stages of booms; and they must be accounted a possible factor in the downturn of new investment. But another factor appears to have operated; namely, a revision in the investors' judgment concerning the appropriateness of further expansions of capacity in the sectors of the economy which have lead the boom. In macro-terms it might be said that in the early stages of the boom the investment market observed a discrepancy between the current level of capacity in certain sectors of the economy and the level that would be appropriate to the expansion of the economy as a whole and its technical possibilities. Toward the latter stages of the boom the investment market begins to observe that discrepancy has narrowed or disappeared, and the danger of relative over-capacity may become real. Time has passed since the new line of investment was undertaken and the scale on which the economy as a whole has entered into this line can now be better observed. Whether or not the investing group includes in its calculations such an over-all view of the investment possibilities, certain direct market phenomena may confront it: the price of securities (or of commodities) in the new lines may cease to rise; news from the gold fields may reflect leaner yields than had been expected; etc. In short, a boom could turn down not only because investment prospects had been dimmed by rising costs or by a falling off of new orders due to the failure of total output to expand at the previous rate, but also because, in the leading lines of new investment, the market had come to appreciate that expansion in certain sectors had proceeded beyond the optimum level, or that decisions already taken would lead to such disproportionate expansion.

These tentative observations on the trade cycle in relation to economic progress must, of course, be subjected to both theoretical and historical scrutiny. They appear to open for exploration, at least, the view that the central phenomenon of the trade cycle is not an inappropriate total level of investment in relation to the rate of economic

author would, however, largely agree with Mr. Hicks's evaluation of the permissive, secondary, and re-enforcing rôle of the money market, presented in his Chapter XII. Compare the author's *British Economy of the Nineteenth Century* (Oxford, 1948), pp. 55-57; 59-61; 79; 182-91.

[10] For a discussion of this point see A. S. Duesenberry, "Hicks on the Trade Cycle," *Quart. Jour. Econ.*, Vol. LXIV, No. 3 (August, 1950), pp. 468 ff.

progress, but an inappropriate balance of investment in relation to the pattern of economic progress and its technical possibilities.

The proposition that it is essentially an inappropriate composition of investment which distinguishes the boom, rather than its scale, must confront the empirical fact that, in the latter stages of many booms total investment is at an extremely high level; and the view of the future taken in many sectors is more optimistic than a reading of the long-term trends would have justified. Could it not be possible that this generalized investment boom was simply a broad response to the fact that, in certain key sectors of the economy, an inappropriately high level of investment was taking place? This limited distortion would take the form of demand curves, in the capital market and in the markets for labor and materials, which were high and inelastic. These could drive the system to inflationary full employment, and hold it there for a time, depending on the period of gestation of the new form of investment or on other (demand) factors which might produce a revised view of its prospects which, by itself, or in conjunction with rising costs, might decree a decline of enterprise in the new directions.

The decline once begun, through familiar re-enforcing processes, might have general consequences for the level of new investment in many directions. What is essential in this perspective is that all forms of investment did not increase, in the course of expansion, to the same extent, in terms of the concept of equilibrium earlier defined. A boom appears to have generally exhausted a line of development in one sector of the economy, as a leading outlet for investment, for a period longer than a single cycle. The same main direction for new enterprise seldom, if ever, dominates successive major (*i.e.*, nine-year) cycles. This may imply that a downturn was "unnecessary" in that all lines of investment had not exceeded their long-period equilibrium level; that the generalized downturn was an indirect product of the legitimate revulsion only from the scale on which the main lines of investment had been previously pursued. Would this not suggest that the problem of controlling the trade cycle was not only a problem in the appropriate level of outlays (investment plus consumption) but also a problem in achieving an appropriate composition of new investment? Might it not also suggest that the long-term rates of growth we observe for the economy as a whole are lower than the optimum possible; that a continuing appropriate pattern of investment, at the full employment level, would move real income forward at a higher rate than its trend defined *ex post* in terms of a succession of peak positions, or otherwise established by elimination of cyclical movements which have taken place in the past?

Another possibility of interest—already familiar, but not fully ex-

AMERICAN BUSINESS CYCLES, 1865-79

By Rendigs Fels*

The American depression of the 1870's is famous in the minds of economists, being the longest cyclical contraction in American history; yet nowhere in print is there a satisfactory history of this depression and the events leading up to it. The *Review of Economic Statistics* published a lengthy factual account in 1920, but it is devoid of cyclical analysis and rendered out-of-date by recent statistical research.[1] Schumpeter has given his interpretation of the period but not a connected history.[2] Arthur Auble has dealt with the depression of the 1870's in his doctoral thesis, which was not published.[3] Mitchell's *Gold, Prices and Wages* is primarily a collection of statistics; he never completed the analysis for which the statistics were intended.[4] Save for isolated references and studies of particular problems, this completes the roster of noteworthy attempts to deal with this chapter of cyclical history.

I. *General Characteristics of the Period*

The period 1865-79 forms a natural unit for study. It roughly encompasses both a major business cycle and what Isard calls a transport-business cycle. Moreover, because it comprises the era, exclusive of the Civil War, in which the United States had an inconvertible paper currency, cyclical influences from international trade were different from those in the years before and after.

Gordon has defined major cycles as consisting of (1) upswings in which long-term investment opportunities are favorable so that down-

* The author is assistant professor of economics at Vanderbilt University. He wishes to acknowledge the helpful comments of Goeffrey H. Moore, Arthur H. Cole, George Terborgh, and Clark Warburton. He also wishes to acknowledge financial assistance from the Institute for Research and Training in the Social Sciences of Vanderbilt University.

[1] Warren M. Persons, Pierson M. Tuttle, and Edwin Frickey, "Business and Financial Conditions Following the Civil War in the United States," *Review of Economic Statistics, Supplement,* July, 1920.

[2] Joseph A. Schumpeter, *Business Cycles* (New York, 1939), Vol. I, pp. 335-40.

[3] Arthur G. Auble, *The Depressions of 1873 and 1882 in the United States* (Harvard University Library, 1949). Another dissertation, this one mimeoprinted, is Ernest R. McCartney, *Crisis of 1873* (Minneapolis, 1935).

[4] Wesley C. Mitchell, *Gold, Prices and Wages Under the Greenback Standard* (Berkeley, Calif.), 1908.

TABLE I.—PRODUCTION AND MONETARY STATISTICS FOR THE UNITED STATES, 1865–1879

(Calendar years except as otherwise noted)

	1865	1866	1867	1868	1869	1870	1871	1872	1873	1874	1875	1876	1877	1878	1879
Production Series															
1. Manufacturing	17	21	22	23	25	25	26	31	30	29	28	28	30	32	36
2. Transportation and Communication	16	16	17	18	20	21	23	25	27	28	27	27	27	28	32
3. Mining	4.0	4.7	4.8	5.1	5.3	5.5	6.7	7.5	8.7	8.4	8.4	8.3	9.8	10.1	11.5
4. Railroad Miles Built															
a. ICC	1,177	1,716	2,249	3,179	4,615	6,078	7,379	5,870	4,097	2,117	1,711	2,712	2,274	2,665	4,809
b. 10th Census	819	1,404	2,541	2,468	4,103	5,658	6,660	7,439	5,217	2,584	1,606	2,575	2,280	2,428	5,006
5. Building Construction	22	29	38	47	54	52	62	52	47	30	29	25	26	19	19
6. Crop Production		25.5	28.0	30.5	31.5	35.0	35.0	39.0	36.0	37.0	45.5	44.5	49.0	51.5	54.5
Monetary Series															
7. Wholesale Prices	132	116	105	98	94	87	83	85	84	81	78	72	68	62	59
8. Surplus of Federal Government ($000,000, fiscal years)	964	37	133	28	48	102	91	97	43	2	13	29	40	21	7
9. Liabilities of Business Failures ($000,000)	18	54	97	64	75	88	85	121	228	155	201	191	191	234	98
10. Gold Premium (per cent)	57.3	40.9	38.2	39.7	33.0	14.9	11.7	12.4	13.8	11.2	14.9	11.5	4.8	0.8	0.0
11. Net Capital Imports ($000,000, fiscal years)	75	70	74	76	122	130	100	112	145	51	20	−50	−100	−150	
12. Increase in RR Capital ($000,000)				697	172	436	188	495	625	437	436	−190	338	−34	100
13. Currency in Circulation ($000,000, June 30)	1,084	940	859	772	741	775	794	829	838	864	834	807	814	820	819

Sources:

1. *Manufacturing:* Edwin Frickey, *Production in the United States, 1860–1914* (Cambridge, Mass., 1947), p. 54. (1899 = 100)

2. *Transportation and Communication: Ibid.*, p. 117. (1899 = 100)

3. *Mining:* Warren M. Persons, *Forecasting Business Cycles* (New York, 1931), pp. 170–71. (1909–13 = 100)

4. *Railroad Miles Built:*

a. *ICC:* U. S. Bureau of the Census, *Historical Statistics of the United States, 1789–1945* (Washington, 1949), p. 200, first differences of Column 1. (The figures thus obtained are net of abandonments.) The Bureau of the Census took its figures from Interstate Commerce Commission, Statement No. 32151, *Railway Statistics Before 1890* (Washington, 1932) mimeographed. The ICC's source was the various annual issues of *Poor's Manual of Railroads* from 1869.

b. *10th Census: Tenth Census of the United States* (1883), Vol. IV, p. 290. It is not clear to what extent these figures are net of abandonments. In the source document, "Total Miles [in existence?] on December 31" for each year differs from the preceding year by the exact number (to the second decimal place) of miles built. This seems to imply that "Miles Built" are net of abandonments. However, the total miles in existence on June 30, 1880 are broken down, *ibid.*, p. 292, into 87,569 miles in operation and 232 miles on which operations had been suspended. The latter figure is so small that it is clear the difference between the figures of the ICC (which are net of abandonments; see above) and those of the *Tenth Census* must be ascribed not to a different treatment of abandonments but to a different source of data. The *Tenth Census* obtained its information from a questionnaire sent in 1880 to all railroads then in existence. Presumably the figures are more reliable for later than for earlier years.

5. *Building Construction:* Clarence D. Long, Jr., *Building Cycles and the Theory of Investment* (Princeton, 1940), p. 228. (1920–30 = 100) The index represents number of new buildings (both residential and non-residential). The number of cities entering into the index varies, so that the figures are not always strictly comparable. For 1865–72 the number of cities is 2; for 1873, 3; for 1874, 4; for 1875–77, 5; for 1878, 6; for 1879, 7.

6. *Crop Production:* C. M. Purves, "New Index of Crop Production in the United States," *The Agricultural Situation*, January 1, 1935, p. 4. (1910–14 = 100)

7. *Wholesale Prices:* U. S. Bureau of the Census, *Historical Statistics of the United States 1789–1945* (Washington, 1945), p. 234. (1926 = 100)

8. *Surplus of Federal Gov't: Ibid.*, pp. 296–97.

9. *Liabilities of Business Failures:* U. S. Bureau of Statistics, *Statistical Abstract of the United States, 1907* (Washington, 1908), p. 725.

10. *Gold Premium:* Wesley C. Mitchell, *Gold, Prices and Wages Under the Greenback Standard* (Berkeley, 1908), p. 4. Averages based on the opening, highest, lowest, and closing quotations on each business day.

11. *Net Capital Imports:* Frank D. Graham, "International Trade Under Depreciated Paper. The United States, 1862–79," *Quarterly Journal of Economics*, February, 1922, p. 231. Figures are in gold values. They include long term capital movements only and are "estimates computed from unofficial sources such as the Commercial and Financial Chronicle, Bankers' Magazine, London Economist."

12. *Increase in RR Capital: Historical Statistics of the United States, 1789–1945*, p. 201, first differences of column 19. Figures include elevated railways, which, however, were probably less than 1% of the total. "Capital" includes stock, mortgage bonds, equipment obligations, etc.

13. *Currency in Circulation: Ibid.*, p. 274.

ward spirals are minor and (2) downswings in which long-term investment opportunities have become seriously impaired so that cumulative expansions are weak and rare. In contrast, minor cycles are dominated by inventories, short-term credit conditions, short-run price-cost maladjustments, etc.[5] Let us make the hypothesis that long-term investment opportunities were favorable from 1865 to 1873 and that they became seriously impaired in the latter year and did not recover until about 1879. If the hypothesis is true, the period 1865-79 forms a major cycle.[6] This sounds reasonable inasmuch as business was generally prosperous from the end of the Civil War through the boom of the early 'seventies (except for two recessions), and was decidedly depressed from the panic of 1873 until 1879. To some extent, the hypothesis will be on trial throughout this article, but some evidence of a general nature is best discussed at once.

In 1865 the stage was set for one of the bursts of innovating activity such as Schumpeter described. During the latter half of the nineteenth century, railroad building was one of the most important forms of investment activity. Yet, on account of depression and strife, by the close of the Civil War it had been nearly a decade since any considerable railroad building had been done. Meanwhile, population was growing rapidly. The area west of the Mississippi, hitherto virtually untouched by the railroads, was ripe for development. A modern investor might have shuddered at the risks involved in building through the sparsely populated West, but in those days of rampant free enterprise, bonds could generally be sold at home or abroad provided the interest rate was high enough. In many cases, the government subsidized railroad building. In addition, the networks east of the Mississippi needed to be filled in. In such favorable conditions, a burst of innovating activity rose to a climax in the early 'seventies, then collapsed.

Conditions were also favorable for investment in housing. There is evidence of a housing shortage at the end of the Civil War,[7] and the

[5] Robert A. Gordon, "Cyclical Experience in the Interwar Period: The Investment Boom of the 'Twenties," unpublished paper presented to the Universities-National Bureau Conference on Business Cycle Research, November 25-27, 1949, pp. 3-10.

[6] This formulation differs only in detail from the findings of Hansen, Schumpeter, and Isard. Hansen dates major depressions 1864, 1873, and 1883 (presumably the years mentioned are the peaks of the preceding prosperities), which implies a major cycle, counting from trough to trough, from sometime after the Civil War, say 1867, until the end of the depression of the 'seventies, say 1878 or 1879. (Alvin H. Hansen, *Fiscal Policy and Business Cycles* [New York, 1941], pp. 23-24.) Schumpeter dated a "Juglar Cycle" from the beginning of 1870 to the middle of 1879 (*op. cit.*, p. 396). Isard found troughs in the seven series that interested him scattered in the early 1860's and again in the years 1875-79. (Walter Isard, "A Neglected Cycle: The Transport-Building Cycle," *Review of Economic Statistics*, November, 1942, pp. 149-158.)

[7] David A. Wells, *Report of the U. S. Special Commissioner of Revenue*, 41st Congress, 2nd Session, House Ex. Doc. No. 27, Dec., 1869, pp. xxiii-xxiv.

close of hostilities greatly accelerated immigration. Hence it is hardly surprising that the building cycle also rose to a peak in the early 'seventies.

We may conclude that the long-term outlook for investment was favorable in the fields of railroad and housing construction (and very likely in other kinds of construction too). But Terborgh has discounted the importance of single great industries, pointing out that steam railroads accounted for only one-eighth of total investment in the decade of the 1870's; and Burns and Mitchell reached negative conclusions on the effect of long building cycles on business cycles.[8] We must seek stronger support for our hypothesis.

Hansen has replied to Terborgh that the latter has neglected "the leverage effect of the multiplier and the acceleration principle."[9] The railroads in their expansion may have stimulated investment in the higher stages of production, *e.g.*, steel.

More important still, transportation costs were reduced not only by the building of the new roads but also by the consolidation of the old. The formation of such networks as the Pennsylvania, the New York Central, the Philadelphia and Reading, the Chicago, Burlington and Quincy, the Chicago and Northwestern, and the Milwaukee and St. Paul reduced the inconveniences of frequent tieups and delays, the cost of numerous interchanges of freight in long hauls, the diversity of railroad practices, and irresponsibility of carriers.[10] Such reductions in transportation costs both in the new territories opened up in the West and in the areas already served by railroads in the East presumably stimulated investments not related to railroads. This was particularly the case for housing, for the railroads may be regarded as instrumental in sucking a great wave of immigrants into the country (immigration rose from 180,000 in 1865 to 460,000 in 1873)[11] and relocating the existing population. But it is difficult to believe that it was not also true for manufacturing, which now found new advantageous sites and the opportunity of producing for wider markets.[12] We may tentatively conclude that the long-term investment outlook was generally favorable in the latter 'sixties.

[8] George Terborgh, *The Bogey of Economic Maturity* (Chicago, 1945), p. 84; Arthur F. Burns and Wesley C. Mitchell, *Measuring Business Cycles* (New York, 1946), pp. 418-27.

[9] Alvin H. Hansen, *Economic Policy and Full Employment* (New York, 1947), p. 303

[10] Walter Isard, *The Economic Dynamics of Transport Technology*, unpublished doctoral dissertation (Harvard University Library, 1943), pp. 61-63.

[11] Harry Jerome, *Migration and Business Cycles* (New York, 1926), p. 35.

[12] Isard, *Dynamics*, pp. 65-67. See also pp. 22-27. This kind of argument is part of Schumpeter's theory of the cycle.

The effect of international trade on business cycles in this period is not clear. The inconvertible paper standard in effect allowed exchange rates to fluctuate freely. The Civil War had partly been financed by printing several hundred million dollars worth of paper money popularly called greenbacks. This forced the government to abandon the gold standard since it could not maintain convertibility between gold and dollars. Nevertheless, it continued to require that import duties be paid in gold, and such gold as the banks held could continue to be counted as part of their reserves. Moreover, the Pacific Coast never abandoned the gold standard. About $25 millions of gold remained in active circulation there. Officially, the exchange rate between the dollar and foreign gold currencies such as the English pound sterling remained unchanged, but as gold could be bought for greenbacks only at premium which varied from one transaction to the next, the exchange rate in reality fluctuated freely.

An increased demand for the exports of a gold standard country—say because harvests are poor abroad—tends to increase prices and incomes both because prices and incomes in the export trades go up with multiplier effects, and because gold imports are increased (or exports decreased), thus increasing the money supply and bank reserves.[13] Eventually, increased incomes and prices mean more imports and less exports, thus bringing trade back into balance; but in the meantime, an expansive impulse has been imparted which will accelerate a concomitant cyclical expansion or retard a cyclical contraction.

Under freely fluctuating exchanges, however, an increased demand for exports merely increases the exchange rate or, in this case, lowers the gold premium. There is no significant way in which the domestic money supply or aggregate income can be affected. Except for capital transactions, the business cycles of the domestic economy are largely isolated from international trade. This conclusion must be qualified however, because the United States retained the use of gold for some purposes during the greenback era, particularly for international trade. To the extent that Americans were willing to absorb gold, increased exports could be expansionary; and to the extent that they were willing to give up gold, increased imports could be deflationary. However, annual fluctuations in the U. S. gold stock were small.[14] It seem

[13] The gold flow part of the gold standard mechanism is now out of favor. See Lloyd A. Metzler, "The Theory of International Trade," in Howard S. Ellis, ed., *A Survey of Contemporary Economics* (Philadelphia, 1948), pp. 216 and 220. I shall not here repeat my defense of gold flows, which has been published as a note, "Gold and International Equilibrium," in the *American Economic Review*, December, 1949, pp. 1281-83.

[14] U. S. Bureau of the Census, *Statistical Abstract of the United States, 1922* (Washington, 1923), p. 512. As the figures do not include bullion outside the vaults of the Treasury, they do not necessarily tell the whole story.

safe to conclude that the paper currency greatly blunted the effect of international trade in goods and services on business cycles.

Capital transactions are a different matter.[15] With freely fluctuating exchanges, capital imports are deflationary. The supply of goods in the domestic economy is increased, either because the capital imports are spent abroad or because they lower the gold premium, thus increasing imports of goods and services and decreasing exports. At the same time, the supply of money is unchanged. Therefore, there is downward pressure on prices. In a similar manner, it can be shown that capital exports are inflationary.

No figures are available on short-term capital movements. Between 1865 and 1873, the United States imported long-term capital. With the onset of depression, capital imports ceased and repayments began. It seems, however, that the deflationary effects in the first period were largely postponed, because the capital imports were used mainly to finance railroad building. As the capital market in the United States was still in an embryonic stage, it is reasonable to assume that without capital imports railroad construction would have been cut down by a corresponding amount, so that the imported capital for the time being increased demand as well as supply. In the longer run, the railroads could have been financed out of domestic funds. By using up investment opportunities so fast, the capital movement accentuated the depression of the 'seventies. By then, however, repayments had become substantial. Accordingly, no large net cyclical influence need be ascribed to long-term international capital transactions.

Largely cut off from foreign influences, wholesale prices fell every year except one between 1865 and 1879, the total decline amounting to 55% (or to get away from the precipitate decline immediately after the Civil War, they fell 45% from 1867 to 1879). For agricultural products, the chief reason is not far to seek. Under the influence of a population increase of 32%, the opening up of new areas by the railroads, release of a million soldiers from the Civil War, reconstruction of the South, and a certain amount of mechanization, agricultural output doubled between 1866 and 1878. Had the United States been on the gold standard, international trade would have put a floor under farm prices. With a paper currency, most of the impact of this enormous increase of output fell on the domestic economy. The two-fold result was a fall of domestic prices and a fall in the gold premium as foreigners sought to buy cheap American products. In fact, the gold premium, which was 103% in 1864 and 41% in 1866, disappeared entirely by the end of 1878.

[15] This paragraph summarizes the theoretical discussion in Gottfried Haberler, *Prosperity and Depression*, 3rd ed. (Lake Success, 1946), pp. 446-51.

While the steady increase in output indicated that low prices were profitable to many farmers who could obtain cheap land, hardship for some was inevitable. Farms that were marginal in 1865 became submarginal as time went on. Those with heavy debt loads were hard hit; the liquidation wringer they were forced through added to the depression of the 'seventies. Even before the depression, farm troubles were expressing themselves in agitation against the railroads; and there is even evidence of a fall in farm wage rates in the face of a tendency for other wages to show the normal cyclical rise.[16] In the 'seventies, the rapid growth of the grangers was a further expression of agricultural troubles.

The fall of agricultural prices dominated the wholesale price index because (1) farm products enter directly into computation of the index, (2) they serve as raw materials for other industries (for instance, cotton textile prices fell because the price of cotton fell), and (3) falling agricultural prices depressed the gold premium, making imports cheaper. But there were other reasons why non-agricultural prices fell. Chief among these was the cyclical cumulative contraction following 1873, which reduced wage rates as well as demand. Moreover, between 1865 and 1869, the currency supply contracted. There were also important technological improvements. Reduction of transport costs has already been mentioned. The iron and steel industry, which among other advances started using the Bessemer process at the end of the war, made gains at the expense of England in spite of the appreciation of the greenback.

II. *The Post-Civil War Recession*

At the end of the Civil War, the American economy faced a great problem of readjustment. A federal budget deficit of almost one billion dollars in the fiscal year 1865—perhaps one-seventh of national income—dropped to less than zero in 1866.[17] The wartime speculative boom in wholesale prices collapsed early in 1865 in anticipation of sound finance, and the change necessitated a shift of economic resources which by itself might have been expected to impose a severe strain on the economy. Pig-iron production, for instance, fell from 1,014

[16] Frank D. Graham, "International Trade Under Depreciated Paper. The United States, 1862-79," *Quarterly Journal of Economics,* February, 1922, p. 271. The statistics for farm wages are even more unreliable than the general run of statistics for this era. Presumably they indicate not necessarily that farm wages in general fell but only that they fell in certain localities.

[17] For the federal deficit, see Table I. For national income, see Robert F. Martin, *National Income in the United States, 1799-1938* (New York, 1939), p. 6. According to Martin, realized national income in 1869 (the nearest date to 1865 for which estimates can be made) was $6,827 million.

thousand long tons in 1864 to 832 in 1865.[18] Another important shift was the release to the working force of one and a half million men who had been directly or indirectly engaged in prosecuting the war.[19] In addition, the working force had to absorb a stream of 300 thousand immigrants in each of the fiscal years 1866 and 1867, compared to 180 thousand in 1865.[20] For one reason or another, the currency supply contracted 30% between 1865 and 1869. As if that were not enough, the South for the time being was economically prostrate. Not until 1878 was the cotton crop to be as large as the 1860 crop.[21]

Great as the needed readjustments were, they are no more impressive than those which were so easily made in the American economy following World War II. But 1945 had three advantages which 1865 lacked—shortages of such modern consumer durables as automobiles and refrigerators, a suppressed inflation that was about to come into the open, and an inflationary export surplus to Europe.[22] Under the circumstances, it is not surprising that instead of a postwar boom, the National Bureau of Economic Research records a cyclical contraction from April 1865 to December 1867.[23] Rather, it is surprising that the reaction was mild. The chief indication of depression was a more rapid fall in wholesale prices than in succeeding years.[24] In only one year, 1867, was the process of cumulative cyclical contraction, as described in business cycle theory, clearly evident.[25] Liabilities of business failures reached $97 million in that year, a figure which, though moderately heavy, was 20% less than in the boom of 1872; New York clearings, which had risen 20% in 1866, in the following year fell below 1865,

[18] Persons, Tuttle, and Frickey, *op. cit.*, p. 27.

[19] David A. Wells, "The Recent Financial, Industrial and Commercial Experience of the United States: A Curious Chapter in Politico-Economic History," in *Cobden Club Essays, Second Series, 1871-2*, 2nd ed. (London, 1872), p. 491.

[20] Jerome, *Migration and Business Cycles*, p. 35.

[21] *Statistical Abstract of the United States, 1882*, p. 123.

[22] The South in 1865 occupied a position analogous to Western Europe in 1945 (or more accurately, to Germany), but it is doubtful if there was any significant net movement of capital into the South such as might have supported an interregional export surplus for the North. See E. Merton Coulter, *The South During Reconstruction, 1865-1877* (Louisiana State University Press, 1947), *passim*, esp. pp. 10, 20, 148-51, 154, 190-2 and 197.

[23] Burns and Mitchell, *op. cit.*, p. 78. The dates given in the text above are the peak and trough respectively.

[24] More precisely, the fall was more rapid than that of a straight-line trend fitted to wholesale price data for 1866-1880. Persons, Tuttle and Frickey, *op. cit.*, p. 28.

[25] In fact, Donald W. Gilbert held that there was a "minor revival" in 1866 ("Business Cycles and Municipal Expenditures," *Review of Economic Statistics*, August, 1933, p. 140); and Isaiah Frank thought that an expansion phase began in August 1865 which he was not sure did not continue without interruption until 1869 (Burns and Mitchell, *op. cit.*, p. 111, note 67).

probably reflecting a decline in the stock market; and Frickey's index of manufacturing production rose less than trend.[26] Here is one more piece of evidence that reconversion adjustments are made easily.

Why was the reaction mild? Balancing the federal budget had nothing like the adverse effect a similar balancing had in 1937, in spite of the relatively greater gap closed. In 1937, the level of activity had become dependent on continued deficit financing. In fiscal 1866, however, disappearance of the deficit merely removed inflationary pressure on prices, allowing them to fall, first because the basis for speculation collapsed and second because output increased. The price decline meant hardship and even liquidation for some, but as long as the existing money supply continued to circulate there was no cause for general contraction.

Another reason for the mild reaction was that investment in building and railroad construction was increasing. According to one estimate, railroad construction increased from 1177 miles in 1865 to 1716 in 1866 and 2249 in 1867. In the latter year, railroad construction was only one-third the mileage of the peak year, 1871, but indirect effects must also be taken into account (see Section I above). Moreover, in the field of building construction, indirect effects from railroad investment were re-enforced by a postwar shortage, so that activity rose in spite of the recession.

And it must be remembered that many of those added to the working force did not seek jobs in industry but went into agriculture, making use of the Homestead Act of 1862 or otherwise acquiring cheap land.

It is more difficult to explain why the 30% contraction of the currency supply between 1865 and 1869 neither caused a severe depression nor prevented the cyclical expansion of 1868-69. The currency contraction was concentrated primarily on interest bearing legal-tender notes of the government. These did not circulate significantly, but they added to bank reserves.[27] Absence of trustworthy statistics on state bank deposits makes it impossible to trace the effects of contraction of interest-bearing legal-tenders, but it is significant that the total of state plus national bank notes was a little higher in 1869 than in 1865. Since contraction of bank reserves would affect notes and deposits equally and since the secular trend was to replace notes with deposits rather than the other way round, we may infer that total bank deposits prob-

[26] Persons, Tuttle and Frickey, *op. cit.*, p. 39; Edwin Frickey, *Production in the United States, 1860-1914* (Cambridge, Mass.), pp. 54 and 60. The index of manufacturing rose more than trend in 1866.

[27] *Historical Statistics of the United States*, p. 276; *Banker's Magazine* (New York) August, 1879, pp. 148-150. There was also a great reduction of state bank notes, but it was fully compensated by a rise in national bank notes.

ably did not decline. (This is plausible inasmuch as the banks had large excess reserves at the end of the Civil War;[28] moreover, part of the notes were presumably held by individuals as investments and did not affect bank reserves). If so, the total money supply (not counting interest-bearing legal tenders as money since they did not circulate) fell perhaps 10% or less over the four years instead of 30%. Even so, currency contraction must have exerted more than a negligible effect.

III. *1867-73*

Under the influence of railroad and building construction, cyclical expansion commenced at the beginning of 1868 and continued, according to the National Bureau, until June of 1869. After that, a mild contraction began. What started recession in the face of a 50% increase in railroad miles built must be a matter of speculation. One possibility is that it originated in financial difficulties. In June, there was a marked money stringency, the call loan rate reaching 44% and never falling below 16%. This was no worse a showing than in November of the preceding year, but inasmuch as call loan money financed the stock market, stock prices declined. Thus the economy had become somewhat vulnerable to contractive forces.

In September, there was a short-lived panic when Jay Gould and Jim Fisk attempted to corner the gold market. They failed, but they temporarily ran the price of gold up from 132 to 162, demoralizing import and export markets and throwing the commercial world into confusion.[29] Although the *Commercial and Financial Chronicle* observed no lasting damage to business, such a panic could have contributed to the mild recession that followed by discouraging inventory accumulation. This is made clear by the minor business cycles of the 1920's in which fluctuations in inventory investment played a large

[28] As evidence, although lawful money reserves of national banks declined from $207 millions at the beginning of 1866 to $149 millions in the middle of 1869, loans and discounts rose in the same period from $501 to $686 millions, deposits from $522 to $574 millions, and national bank notes from $276 in 1866 to $292 millions in 1869. (Persons, Tuttle and Frickey, *op. cit.*, pp. 51 and 53; *Historical Statistics of the United States*, p. 276.)

Moreover, the retirement of interest bearing legal-tenders overstates the loss of potential bank reserves. "When the compound-interest notes were finally paid off in 1867, the Banks had influence enough with Congress to procure the passage of a law creating, for their special benefit, 50 millions of temporary loan certificates, payable on demand, but bearing 3 per cent interest, the statute providing that their reserve fund might consist of such certificates." Francis Bowen, *American Political Economy* (New York, 1870), pp. 384-85.

[29] Davis R. Dewey, *Financial History of the United States*, 10th ed. (New York, 1928), pp. 369-70; Warren F. Hickernell, *Financial and Business Forecasting*, Alexander Hamilton Institute, Vol. I, pp. 311-14; *Commercial and Financial Chronicle*, Vol. IX, (1869), pp. 406, 437, 453-55.

rôle. According to Kuznets, inventory accumulation was relatively more than twice as large in the decade 1869-78 as in 1919-28.[30] While these figures do not gauge the relative importance for cycles of inventory changes in the two periods, they do indicate that actual decumulation of inventories would not have been necessary to start a contraction of business activity in 1869. Cessation of accumulation would shut off an important avenue for the use of funds. With a declining stock market, the funds might be hoarded long enough to initiate contraction. The fact that the panic came after the cyclical peak does not damage the above hypothesis, for business is subject to many inconsequential ups and downs which do not count as business cycles.

Contraction was necessarily mild as it was bucking against expansion in construction. In fact, the acceleration in additions to railroad miles in operation was greatest in 1869 and 1870. The housing index, however, declined in 1870, though it was to reach a peak in 1871. Professor Frickey's annual index of manufacturing did not increase in 1870, but neither did it decline. The sharp increase in railroad earnings came to a temporary halt. Imports declined for a time. By the beginning of 1871, the *Chronicle* was casually saying, "business is stagnant" but with no implication that anything was seriously awry.[31]

The trough, according to the National Bureau, came in December, 1870, and by the second quarter of 1871, expansion was plainly under way again. Business flourished until the fall of 1873. Frickey's index of manufacturing rose 20% between 1870 and 1873, and his production index for transportation and communication increased even more. Wholesale prices, reversing their downward trend, rose sharply from August 1871 until the spring of 1873. Oddly enough, wage rates, which hitherto had been rising in spite of falling prices, now tended to level off.[32] Railroad earnings rose spectacularly.

Investment in building apparently went into a decline before the panic of September 1873. The indexes of both Long and Riggleman show that the peak of *physical* construction came in 1871. The evidence is not clear as to how soon railroad investment began to decline. One estimate gives the peak in miles built as 1871, the other, as 1872. Orders for rails began to fall off only in the spring of 1872, and "apparent consumption" of rails reached its peak in that calendar year. Orders for locomotives also show 1872 as the best year, while orders

[30] Simon S. Kuznets, *National Product Since 1869* (New York, 1946), pp. 118-19. Net changes in inventories averaged $380 millions in 1869-78, or 5.4% of gross national product, which was $7,033 million. For 1919-28, the figure was $1,756, or 2.2% of GNP ($81,199).

[31] *Commercial and Financial Chronicle,* January 14, 1871, p. 37.

[32] George F. Warren and Frank A. Pearson, *Prices* (New York, 1933), p. 197.

for cars boomed until the second quarter of 1873.[33] These peaks relate to physical volume only. As steel prices rose sharply in 1872, the peak in expenditures may have come later than the peak in physical expansion. Moreover, in so far as the data relate to orders, physical peaks themselves may have lagged behind the dates given. Annual figures for the increase of railroad capital confirm these misgivings, showing a decided peak in 1873. We may conclude that even if the value of railroad investment did not decline prior to the panic, the transport-building cycle gave every evidence of being at the peak or beyond.

IV. *The Panic of 1873*

The National Bureau dates the cyclical peak as October 1873, the month following the outbreak of the banking panic. If we accept the Bureau's dating, we shall have no alternative but to conclude (as we shall see below) that the panic was the proximate cause of the business downturn. Now in principle there are many reasons for not accepting the Bureau's dates in blind faith. Not the least of such reasons is the scarcity of monthly data for the 1870's. Moreover, the intentionally vague definition of the business cycle employed by the National Bureau, however well suited to their research methods, does not seem precise enough for present purposes. Nevertheless, in spite of the fact that Ayres dated the peak long before the panic,[34] I have not discovered substantial reason for differing with the National Bureau; and in any event an outsider could hardly expect to challenge their results successfully in view of the amount of careful labor they have put into them. I shall, therefore, assume that business activity did not go into a cyclical decline prior to the panic.

This is not to say that a downturn would not have occurred had there been no banking difficulties. But if a patient with malignant cancer dies in a hospital fire, the coroner's report ignores the pathological processes which would have done away with him the next day and records the accidental nature of his death. So will it be here, inasmuch as my purpose is to narrate what did happen, not what might have happened.

The event which made a banking panic inevitable was the failure of Jay Cooke & Co.[35] Cooke, as the man who had financed the Civil War,

[33] John E. Partington, *Railroad Purchasing and the Business Cycle* (Washington, 1929), pp. 37-47.

[34] Leonard P. Ayres, *Turning Points in Business Cycles* (New York, 1939), p. 35. Ayres' dating was based on a hybrid index of business conditions obtained by combining 10 series relating to production, consumption and freight movements. Since he used deviations of the series from their norms, he gave his index a bias in favor of early dating of peaks.

[35] The account of the panic which follows is based, except as otherwise indicated, on Oliver M. W. Sprague, *History of Crises Under the National Banking System*, 61st Con-

enjoyed an extraordinary reputation. His downfall did far more damage than the failure of a financial pirate could have. He had taken on the risky job of financing the Northern Pacific Railroad. By May 1873, this road had spent over $15 millions, had little more than 500 miles in operation through a sparsely populated region, and the two portions of its lines were still more than 1,000 miles apart. More than once Cooke had been on the verge of finding customers for his $100 millions of bonds, but each time the deal fell through. Now, to keep the road going, he was advancing money obtained from depositors at short-term in expectation that an European market would develop.

But the market for railroad bonds turned worse in 1873 rather than better. Tight money was perhaps the principal cause,[36] but there were several others. Twenty-five railroads defaulted on interest on their bonds between January 1 and August 31,[37] a circumstance which affected the market unfavorably.[38] The Granger movement, though still in its infancy, prejudiced capitalists against the railroads.[39] The *Chronicle* was consistently optimistic about the safety of railroad bonds and even after the panic admitted only reluctantly that railroad building had been too rapid and that "some roads have been built in sections of the country where they were not yet needed, and could not have had any reasonable prospect of making sufficient net earnings to pay their annual interest";[40] but the *Nation* the previous year published an article claiming that "railroad securities in America are not more profitable on the whole, while decidedly less secure, than the bonds of the United States" and that in western states more roads had been built than the population could support.[41] Some investors abroad, as well as at home, evidently thought along the same lines as the *Nation*. In the summer of 1873, the *Chronicle* reported that foreign purchasers of bonds were favoring governments over railroads.[42] Moreover, despite the fact that Graham's figures (see Table I) show more net long-term capital imports in 1873 than any other year, the *Chronicle* further reported that foreigners were shunning new issues of railroad securities.[43] Although the money stringency had a good deal to do with drying

gress, 2d. Session, Senate Doc. No. 538 (Washington, 1910), pp. 1-89. See also Henrietta M. Larson, *Jay Cooke, Private Banker* (Cambridge, Mass., 1936), Chap. 19.

[36] *Chronicle*, January 10, 1874, p. 28.

[37] *Ibid.*, p. 36.

[38] *Ibid.*, August 2, 1873, p. 150.

[39] *Ibid.*, January 10, 1874, p. 28.

[40] *Ibid.*, November 15, 1873, p. 647.

[41] August 15, 1872, pp. 102-3.

[42] August 9, 1873, p. 173.

[43] March 29, 1873, pp. 407 and 408.
See also December 21, 1872, p. 822.

up the market for bonds, the evidence indicates not only that investors in 1873 were turning away from newly issued railroad bonds but also that they had good reason to do so.

Jay Cooke was not the only one engaged in the dangerous practice of advancing short-term funds for long-term use. The New York banks had loaned money to railroads who expected to raise funds for repayment by selling bonds before the notes fell due.[44] The usual midsummer ease in the money market in 1873 induced the New York banks to increase their loans further with the intention of recalling them before money became tight in the fall.

Such unsound banking practices impinged on a situation made vulnerable by the downturn of railroad and building construction. Imports had reached their peak in 1872. Stock prices and New York clearings declined sharply in the first half of 1873. Wholesale prices resumed their downward trend after reaching a peak in the first quarter. Clearings in Philadelphia reached their maximum in the second quarter.

Cyclic weakness, however, was less important than structural banking weakness. Under the National Banking System, there was no effective central bank to act as lender of last resort and thus shield business and the stock market from panicky calling of loans in time of crisis. In addition, banking troubles were likely to spread from New York throughout the country inasmuch as bank reserves were concentrated in that city. The law permitted country banks to keep three-fifths of their required reserves on deposit in any of fifteen reserve cities. In 1873, New York banks were obligated to other banks for more than their total reserves, and seventy to eighty per cent of bankers' deposits were held by seven of New York's sixty banks. Trouble in New York might lead to hasty withdrawal of bankers deposits, undermining the position of banks both in New York and the hinterland, encouraging runs, and leading quickly to contraction of loans.

Trouble was more likely to come in autumn than at any other time. Moving of crops regularly necessitated a drain of money from New York to the interior. As the currency supply was highly inelastic, if the New York bank reserves were low (as they were in 1873), failures would be precipitated then if ever. So it was not surprising that unsound railroad financing was exposed in September. On the eighth, the New York Warehouse and Security Co., which had financed the Missouri, Kansas and Texas Railroad, was forced to suspend. On the thirteenth, the important banking house of Kenyon, Cox & Co., in which Daniel Drew was a partner, failed on account of indorsements of paper of the Canada Southern Railroad. These disasters wreaked havoc on the stock market but nothing more.

On Thursday, September 18, Jay Cooke & Co. failed on account of its advances to the Northern Pacific Railroad plus a heavy drain by depositors on its cash resources. This caused general distrust and a rapid calling in of loans, precipitating failure of Fisk and Hatch the next day. Stocks plummeted, and failures followed thick and fast. On September 20, two trust companies suspended. Though they later were able to resume business, immediate consequences were far reaching. One, the Fourth National, held $15 millions of bankers' deposits; hence, the suspension hurt outside banks, and led to runs and the recall of funds from New York.

The panic was handled well. On September 20, the New York Clearing House Association arranged for its members to deposit approved securities with a committee of five, which then issued certificates of deposit ("clearing house certificates") up to 75% of the value of the securities. The certificates could then be used to settle clearing house balances. Thus the policy of every bank recalling loans, thereby ruining each other and business too, was avoided. Unfortunately, mounting calls for cash from the interior forced partial suspension of cash payments. On September 24th, the clearing house banks passed a resolution that all checks issued would be stamped "Payable through the Clearing House," thus concentrating control of reserves in the committee's hands. Partial suspension in New York necessarily caused partial suspension throughout the country, except in California, which was on a gold basis. But the committee controlling the New York reserves restored confidence by using them freely. Panic was over by September 29, eleven days after it had begun. After October 18, New York bank reserves began to increase, and by mid-November the reserve ratio once again exceeded the legal minimum.

What effect did the banking panic have on business? In the first place, there was a brief paralysis of the crop movement. Secondly, on September 20, foreign exchange became blocked. However, the issue of clearing house certificates on September 24 enabled the banks to resume purchasing foreign bills. Towards the end of the week, England began to ship gold, enabling exports to move. Thirdly, the panic caused considerable hoarding, *e.g.*, because businesses kept their cash receipts in their own vaults instead of depositing them in banks. The national banks lost 23% of their holdings of legal tender notes between September 12 and October 13, a symptom of the hoarding. But the New York banks used their reserves so freely that the desire to hoard stopped. In the meantime, however, the hoarding aggravated the effects of partial suspension (which lasted nearly three weeks), and numerous firms had difficulty meeting payrolls. These had to reduce employment because they could neither get the cash to which they were entitled nor negotiate loans. Fourthly, after the middle of October, although

there was no longer any difficulty meeting payrolls, businessmen had to cut production because demand had fallen. Contributing to the decline of orders was the decline of railroad and building construction. But it is difficult not to believe that the most important immediate factor was the interruption of business during the panic. To the extent that payrolls could not be met, consumer demand was cut. More significant, it can be assumed that businessmen during the panic either cancelled orders or curtailed making new ones. Once the purely monetary troubles were over, the decline of spending and ordering curtailed output, which in turn reduced spending, and so on in the familiar process. Even without a decline of long-term investment prospects to reenforce it, the panic by itself could have started a cumulative cyclical decline.

V. *Theory of the Downturn*

If we regard theories as tools for understanding reality, we have been able to get along with very few tools in accounting for the downturn of 1873. We have not had to mention any of the theories of the upper turning-point. Nevertheless, it is useful to discuss them at this point, because they can give us a more penetrating understanding. Moreover, theories can be considered as generalizations of reality as well as tools; and we now have an opportunity to test their generality with a case in which the essential processes stand out in unusual clarity. Besides, the discussion may throw some light on the history of business cycle theory, for the facts (some of which have always been widely known) are consistent with several different theories.

1. *Hawtrey.* According to Hawtrey's purely monetary theory, cyclical expansion leads to a drain of currency out of banks and into circulation as wages and incomes rise. Sooner or later the banks reach the end of their reserves and must stop expanding credit, but as the rise in wages and incomes lags behind credit, the drain of currency continues. This forces the banks to contract, initiating depression.

That is roughly what happened in 1873. The banks expanded to the limit during the summer. The autumnal drain of cash into the interior helped set off a violent process of monetary contraction. But this is a superficial interpretation. It leaves too much out of the picture. For instance, it ignores the likelihood that greater elasticity of credit would not have saved the situation but would have permitted the multiplication of unsound financial practises, leading in the end to still greater difficulties;[45] only revival in the securities markets could have saved Jay Cooke and his ilk. Nor do the facts bear out Hawtrey's theory in detail. But the case illustrates how the monetary theory in one form or

[45] Schumpeter, *op. cit.*, Vol. I, p. 316.

another could be so popular prior to the 1930's. The facts do not contradict it.

2. *Cassel.*[46] According to Cassel, shortage of capital causes the downturn. At the beginning of the upswing, or high conjuncture, the rate of interest is low. This induces businessmen to take advantage of the opportunities provided by technical progress (*e.g.*, railways), the opening up of new countries, and the increase of population to launch ambitious investment programs. In the upswing, production of fixed capital grows more rapidly than production of consumers goods. For four reasons, the supply of money capital does not grow as rapidly as the output of capital goods: (1) if savings were a constant proportion of income, the relative growth of output of fixed capital would create a disparity; (2) in fact, savings are not a constant proportion of income but are relatively large at the first part of an upswing when profits are high but towards the end ("in the high conjuncture proper") fall off relatively as wages rise and profits decline, so that the interest rate rises towards the end of the upswing; (3) this is accentuated by the increased returns from fixed capital at the earlier part, which rise more rapidly than the prices of capital goods and therefore tend to raise the interest rate; and (4) in the earlier period, banks create new purchasing power at low interest rates, diverting production to capital goods, and hiding the increasing stringency of capital; but "when the banks afterward find it necessary in their own interest to cut down this excessive supply of media of payment, the real scarcity of capital is suddenly and acutely felt."[47] The high rate of interest at the end of the upswing cuts down the demand for capital goods, frequently forcing the abandonment of projects already begun. Workers in the capital goods industries lose their jobs. Usually, a crisis marks the onset of depression. Cassel defines crisis "as a time of general inability to meet obligations which fall due."[48] It is caused by "an overestimate of the supply of capital, or the amount of savings available for taking over the real capital produced."[49]

In so far as they can be ascertained, the facts of 1865-73 fit Cassel's theory well. After a considerable period of easy money and expanding credit, money conditions became tight in 1872. Meantime, the Northern

[46] Gustav Cassel, *The Theory of Social Economy*, translated by Joseph McCabe, (New York, 1924), Fourth Book, esp. pp. 596-628. I take Cassel as an example to represent the shortage-of-capital school primarily because he meant his theory to explain the conjunctures of the period 1870-1914. Similar remarks to those that follow in the text above could be made about Hayek's monetary overinvestment theory as summarized by Haberler, *op. cit.*, pp. 33-72.

[47] *Ibid.*, p. 628.

[48] *Ibid.*, p. 509.

[49] *Ibid.*, p. 626.

Pacific and some other roads made grandiose plans based on an overestimate of the supply of capital that would be forthcoming. When the elasticity of the credit system ceased to hide the shortage of capital, the inability of a few to meet their obligations became translated through runs into a panic and a partial breakdown of the banking system. After the crisis, the shortage of capital was accentuated because foreign investors stopped buying American securities.

There is much to commend this interpretation. It turns on a fact other explanations are apt to ignore, namely that the decline of railway investment was due to lack of investors more than lack of projects. On the other hand, one cannot help feeling that investors were chary not (or not only) because they did not have enough funds but because they recognized a change in the profits prospects of new investments. Although Cassel's theory accounts for much more of what happened than Hawtrey's, it still does not cover the whole ground.

3. *Haberler.* As Haberler's *Prosperity and Depression* is now the standard theoretical work on cycles, it is interesting to apply his eclectic theory of the downturn to 1873.[50] I shall omit all reference to monetary contraction because it plays only a small part in Haberler's synthesis and has already been discussed above in connection with Hawtrey.

First, Haberler discusses how a partial breakdown, say in a particular industry, can develop into general contraction. This need not detain us here. Second, he shows how, as the upswing progresses, the economy becomes more and more vulnerable to deflationary shocks. The upswing requires an elastic supply of both money and factors of production. As the banks become loaned up and the available workers all find jobs, the force of the expansion diminishes. Now, in the early 1870's inelasticity of the money supply had a braking influence, but the supply of labor was unusually elastic for boom times due to immigration.

Third, Haberler discusses two endogenous causes of the downturn: the acceleration principle, and a drop of investment because of insufficient demand. If expansion slows down or stops because the money supply becomes inelastic, the acceleration principle makes it extremely likely that workers must shift from capital goods industries where output has been geared to a rate of increase in demand for consumers' goods which can no longer be maintained. Even if aggregate demand for the time being does not decline, it is unlikely that the shifts can be accomplished quickly enough. The result is unemployment in certain capital goods industries followed by cumulative contraction. For 1873, there is no evidence of such a mechanism.

Declining investment on account of insufficient demand, the other endogenous cause Haberler discusses, has a number of variants, chief

[50] *Op. cit.*, pp. 347-77.

of which is exhaustion of investment opportunities. If the industries directly concerned are taken by surprise—if they have been overly optimistic, for instance—"the boom will explode with a more or less strong 'detonation' of bankruptcy, to use an expression of Professor Pigou."[51] This explanation is applicable to 1873, and is a major element of Schumpeter's interpretation, as we shall see in a moment. But like Cassel's, Haberler's theory does not cover the whole ground.

4. *Schumpeter*. The theories of Hawtrey, Cassel and Haberler could be summarized briefly without doing undue violence to their substance, but Schumpeter's theory is so elaborate that I shall have to assume the reader is familiar with it and content myself with the comments he has specifically directed to the cycle under consideration here. Discussing the spurt in railroad building during 1869-71, he says,

> Two things are perfectly clear. First, that development . . . was a typical downgrade development within the meaning of our model. It was a Juglar prosperity superimposed on a Kondratieff recession,[52] a new step in what was no longer fundamentally new, but a process of carrying out what had previously been initiated. . . . This left plenty of problems for the individual case, but they were comparatively easy to solve, further eased by the growth of the environment, and of the type which is characteristic of "exploiting investment opportunity" and "pushing into new economic space." Moreover, the general features of the period support this interpretation. There was a great building boom. The well-being of all classes in the years 1869 to 1873 . . . is obviously due to the expansion of production which our schema leads us to expect in every Kondratieff recession. But it is not less clear, in the second place, that that method of financing which so well illustrates our theory, was handled with such carelessness as to make it an additional cause of the situation of 1873. It not only induced but really also presupposed abnormal speculative activity and could not without it have gone to anything like the lengths it did. The phenomena of the Secondary Wave were developed to an unusual degree thereby, and errors and cases of misconduct became possible which our model does not account for per se . . . and it becomes understandable that even as regards the railroad business these things were more obviously in evidence than the underlying process and that it seemed as if construction had been brought to a stop and the success of existing lines had been jeopardized by them rather than by any 'logic of evolution.' But even so, nobody can deny . . . that railroad construction had temporarily exhausted possibilities—a formulation which is more correct than the more common phrase of things having been overdone—and it should be easy to see that this, together with the dislocating consequences immediate and ulterior, for the economic system, of new construction was what created the situation in which the Secondary Wave broke, and with

[51] *Ibid.*, p. 375.

[52] Undoubtedly a slip. It is clear from Professor Schumpeter's model, his chronology on page 396, and his statement on page 338 that he meant Kondratieff *depression*.

it untenable credit situations and speculative bubbles all over the field of industry and commerce.

. . . It is not astonishing that the impact was primarily on the new, instead of on those elements that progress had made obsolete. For, as was pointed out in our theoretical chapters, this will always happen if the new things stand on a slender and the old things on a safe financial basis. Thus, the role played in the drama by the Northern Pacific failure does not any more contradict expectation from our model than does the fact that, in general, danger signals first became visible in the railroad field.[53]

The passage quoted is a brilliant synthesis of the monetary and "real" forces at work. It brings out the underlying importance of entrepreneurial activity in railroads and shows how it gave rise to the excesses of the boom and the ultimate collapse. Banking panics for Schumpeter are always partly accidental, and so it was in this case; but given the institutional arrangements of the time, his theory shows how at certain times—including this one—events make a panic if not probable at least understandable. That his interpretation does not make use of the shortage of capital which was manifest in 1873 is a source of strength rather than weakness, for he emphasizes a more significant fact, namely, that the railroads were ceasing to be attractive to investors. Although Schumpeter's work as a whole has been subject to important criticisms, for this particular episode it offers a more convincing explanation than any other.

VI. *The Depression of the 1870's*

The cyclical contraction which followed the panic of 1873 was the longest in the history of American business cycles. According to the National Bureau, it lasted until March 1879, a span of five years and five months. In monetary statistics, it was second in severity only to the contraction of 1929-33 among post-Civil War cycles. Hubbard has measured the severity of depressions in terms of the decline in bank clearings or debits. The records begin only with 1875; yet the decline for 1875-78 was greater than for any other except 1893-97 and 1929-33. It was virtually as great as 1893-97 and undoubtedly would have been greater if statistics were available from the peak of 1873.[54] Eckler used six series to measure the severity of depressions. He found that 1873-78 was second only to 1929-32, and this result was mainly due to the three monetary series used.[55]

[53] *Op. cit.*, Vol. I, pp. 335-36.

[54] Joseph B. Hubbard, "Business Declines and Recoveries," *Review of Economic Statistics*, February, 1936, pp. 18-19.

[55] A. Ross Eckler, "A Measure of the Severity of Depressions, 1873-1932," *Review of Economic Statistics,* May 15, 1933, p. 79. 1929-32 was the deepest depression in all six

Nevertheless, in terms of output the contraction of the 'seventies was singularly mild. Frickey's indexes of production for manufacturing and for transportation and communication declined markedly less than in 1893-94 and 1907-8 even though the latter contractions were much shorter; and manufacturing did not decline after 1875 but actually increased 14% in the last two years of the depression.[56] Martin's figures show that in spite of the long depression, real income in 1879 was two-thirds greater than in 1869. Even on a per capita basis, the increase was one-third.[57] In June 1878, which was presumably as bad a time as any, Carroll Wright took a kind of census which showed only 28,500 people unemployed in Massachusetts out of a normal working force in "mechanical industries" of 318,000.[58] Although comparison with modern figures is not reliable, this looks no worse than 1930.[59]

The panic of 1873, the disillusionment of investors about the railroads, the indirect effects of the decline in railroad investment, and the position of the 'seventies in the downswing of a building cycle are fully sufficient to account for events through 1876. What needs to be explained is (1) why the depression lasted so long and (2) why it was so mild in terms of output, particularly in the last two years.[60]

If the United States had been on the gold standard in 1873 at the exchange rate which then actually prevailed, cyclical contraction might have come to an end two years sooner than it did. Under gold standard conditions, a small country undergoing depression reduces imports as national income drops, but its exports are maintained. Moreover, if

series. The contraction of the 'seventies was second in two monetary series (clearings and railway revenues) and third in the other (imports). It was second in one of the physical series (coal production), fifth and sixth in the other two (pig iron production and cotton consumption; however, Eckler does not make it quite clear whether cotton consumption was a physical or a monetary series).

[56] The coverage of the indexes is rather meager, so that too much confidence cannot be placed in inferences drawn from them. One need not necessarily conclude that manufacturing output as a whole increased in 1877 and 1878. Nevertheless, the figures are comparable over the whole period, 1865-1914, so that comparisons among different cycles of this period should be reasonably trustworthy.

[57] Martin, *op. cit.*, p. 6. It should not be necessary to stress that national income figures for this period are subject to a wide margin of error.

[58] *Tenth Annual Report of the Bureau of Statistics of Labor,* Massachusetts Public Doc. No. 31, January, 1879, pp. 6-13. Applying the ratio of unemployed in Massachusetts to the whole country, Wright estimated total unemployment in the United States at 570,000.

[59] In 1930, out of a *total* labor force of 48.7 million, there were 4.2 million unemployed. Civil non-agricultural employment was 31.1 million. *Twenty-Sixth Annual Report of the National Bureau of Economic Research* (New York, 1946), p. 31.

[60] I have dealt with Schumpeter's explanation of the depression of the 1870's elsewhere and shall not repeat myself here. See my article, "The Long-Wave Depression, 1873-97," *Review of Economics and Statistics,* Feb., 1949, pp. 71-72. For a criticism of that article, see Richard V. Clemence and Francis S. Doody, *The Schumpeterian System* (Cambridge, 1950), pp. 80, 90 and 91.

its prices fall, both domestic and foreign buyers shift to its products and away from foreign commodities. For both reasons, depression generates a favorable balance of payments which helps arrest cyclical contraction. The greenback appreciated a small amount between 1873 and 1876 and in the following year appreciated almost seven per cent more. The forces which under paper standard conditions caused this appreciation would under gold standard conditions have been largely channeled into stimulating the domestic economy, or rather, into arresting the fall of prices. In 1877, moreover, there is evidence of an upturn in railroad investment, building construction, manufacturing, and mining. This indicates that under gold standard conditions deflation might well have been ended by 1877, other circumstances being favorable to cyclical revival.

Since the United States was not on the gold standard, we must inquire what effect price flexibility had on the course of contraction.[61] It is safe to assume that prices (including wages) were more flexible in the 1870's than in the 1930's. Wholesale farm prices generally are highly flexible. Inasmuch as they fell somewhat more sluggishly in the 1870's than non-farm prices[62] (whereas they fell much more rapidly than other prices between 1929 and 1933), other wholesale prices must have been highly flexible also.

The effect of price flexibility on cyclical contraction can be brought out by contrasting two situations. First, assume that the economy momentarily rests in Keynesian underemployment equilibrium but wages and prices begin to fall. So long as they continue to fall—and there is no necessary reason why they should not fall forever—statistical series will exhibit many of the characteristics of cyclical contraction; and even if circumstances now become favorable to cyclical expansion, revival will be postponed or hindered by the general deflation. This seems to be more or less what happened in 1877 and 1878.

Second, assume that a cyclical contraction is under way. If price changes do not alter the course of aggregate spending, price flexibility increases output above what it otherwise would have been (with a given amount of spending, output is an inverse function of the price level). Of course, the fall of prices will not leave the course of aggregate spending unchanged, but its effects work in both directions.

In the 1870's, price flexibility probably reduced aggregate spending below what it otherwise would have been but not by so much as to

[61] The discussion of price flexibility in the text draws on an article by the present writer, which has been published in the *Quarterly Journal of Economics* for November 1950. On account of space limitations, no more than a summary of the results of that article can be given.

[62] Mitchell, *op. cit.*, p. 54.

reverse the tendency for flexibility to mitigate the decline of output. I have no direct evidence about the state of expectations, but it is probable that flexibility induced expectations that prices would fall further. As a matter of fact, prices had been falling, with one interruption, ever since 1865; yet until 1878 they were still above the pre-Civil War normal. In addition, in the lame-duck session of early 1875, Congress passed a law providing for resumption of specie payments on January 1, 1879; and in the spring of 1877 the Secretary of the Treasury began to make effective preparations to implement the law. It should have been evident that if resumption was to be carried through, American prices would have to fall relative to foreign prices (which were also falling). The government did not in fact put effective pressure on the price level, but that would not keep the prospect of resumption from affecting expectations unfavorably. Offsetting in part the factors adverse to spending was the rise in the value of currency and publicly held government debt. Because retail prices fell more slowly than wholesale prices, government obligations increased in value only a little over ten per cent. We may conclude, therefore, that price and wage flexibility probably intensified the contraction of spending, mitigated the decline of output, and prolonged the contraction phase of the cycle.[63]

There is one other important circumstance which must be considered. On account of the large amount of investment in railroads prior to 1873, we might expect that several years would pass before the revival of railroad building. On the other hand, there was no shortage of railroads to be built. Construction of many roads had had to be abandoned during the depression before their main lines were completed, and the steady growth of population and agricultural output continually increased the inducement for the roads to expand. In view of the experience of the 1880's (the 1885 trough in railroad investment came only three or four years after the peak and was followed by a vigorous expansion), we might reasonably expect railroad activity to revive about 1876 or 1877. And in fact, the evidence indicates that it did so, though it is conflicting as to the exact time. The number of miles built reached its trough in 1875 and then increased substantially in the following year. The increase in railroad capital shows a trough in 1876 with a substantial revival in 1877. Orders for most types of

[63] It might be inquired why flexibility did not also make the contractions of 1893-94 and 1907-8 mild with respect to output. The answer, I think, lies in the greater violence of the panics with which those contractions began.

The statement that price flexibility mitigated the decline of output but prolonged the contraction phase of the cycle sounds inconsistent. The explanation lies in the fact that the decline in output apparently ended around 1877 whereas the contraction (according to NBER) continued until March 1879.

railroad equipment revived in 1876 or 1877.[64] But all the evidence points to an early relapse of railroad investment. Why?

No doubt the continuance of deflation elsewhere in the economy provides part of the answer. Had deflation stopped, the railroads could have sparked a revival. But part of the answer must be sought within the railroad industry itself. There were three specific factors which discouraged investment in railroads: freight rate wars were acute in 1876; railroad strikes, which had to be quelled by military force, occurred in 1877; and federal, state, and local aid to railroad companies was replaced during the depression by efforts, occasionally successful, to pass legislation regulating railroads and railroad rates.

By 1879 conditions were ripe for recovery. Specie payments were successfully resumed on January 1, a step that (if we can believe the *Chronicle*) had favorable effects on business confidence. By that time, prices were well below even the pre-Civil War normal. Not only was there no need to expect prices to fall farther but in fact they stopped falling. In addition, investment in railroads revived strongly in response to the new business furnished by a 50% increase in crop production since 1873 and the sales of railroad land grants to new settlers. During the summer it became apparent that the United States was to enjoy unusually bountiful crops, Europe unusually poor ones, a combination which for a predominantly agricultural country on the gold standard was a powerful stimulant. Thereafter, the expansion phase of the cycle was in full sway.

VII. *Conclusions*

When warfare ended in 1865, long-term investment prospects became favorable, particularly in railroads. Nevertheless, readjustment to peacetime conditions brought on a recession which lasted until the end of 1867. There was another recession in 1869-70, the causes of which are obscure. But the expansion of railroad investment went on, climaxing in a boom in 1872-73. By that time long-term investment prospects, from the point of view of the man who puts up the money, appear to have taken a turn for the worse. Nevertheless, a banking panic, the origins of which lay in the excesses of the railroad boom, was the immediate cause of the cyclical downturn. The theories of Schumpeter and Cassel both fit the facts of the downturn. Of the two, I prefer Schumpeter's, though available evidence is not sufficient to settle the issue. The depression that followed is the longest of which we have record, lasting until early 1879. Though exceedingly severe in monetary terms, it was mild in real terms, partly as a result of price

[64] Partington, *op. cit.*, p. 53.

flexibility. The unfavorable long-term investment situation accounts for the depression lasting through 1876 or 1877, but about that time the outlook appears to have improved. However, a number of short-run influences—the fact that the United States was off the gold standard; a high degree of price flexibility; unfavorable price expectations; rate wars, strikes and adverse legislation in the railroad industry—delayed recovery. In 1879, the return to the gold standard put a floor under prices and increased confidence; and poor crops abroad combined with bumper crops in the United States gave a powerful stimulus, so that short-run as well as long-run prospects became propitious.

The hypothesis of a major cycle from 1865 to 1879 (with the peak in 1873) requires a minor qualification. Long-term investment prospects, though the evidence is not altogether certain, apparently changed before the business cycle peak of 1873 and trough of 1879. Strictly speaking, we should perhaps date our major cycle accordingly. But simplicity and convenience dictate that we date the peaks and troughs of major cycles to coincide with peaks and troughs of business cycles. Otherwise, the hypothesis stands up.

THE MULTIPLIER TIME PERIOD: MONEY, INVENTORIES, AND FLEXIBILITY

By GARDNER ACKLEY*

The multiplier concept was introduced into economics as a device in comparative statics, showing the extent to which equilibrium levels of less-than-full-employment income differ with different magnitudes of "injections"—*i.e,* expenditures whose size does not depend on the level of income. In this setting, the multiplier is, of course, merely a "fifth wheel," to use Professor A. G. Hart's phrase.[1] The analysis can be developed without using it at all. Nevertheless, it does constitute a convenient summary of some aspects of the behavior of the simpler model systems. And it cannot be denied that the multiplier has had a certain usefulness in *dramatizing* the importance of investment expenditures (and public expenditures or deficits) in policy discussions.

Used as a device in comparative statics, however, the multiplier concept is of little use to the policy maker, whose interest is not only in the *size* of the ultimate increase in income assumed to result from a given increment in, say, deficit-financed expenditure, but as much in *when* this will occur: what the results will be in one month, six months, one year. To answer the latter question, the multiplier must be recast in dynamic terms; the process of income change must be thought of in terms of successive "rounds" of partial respending of income, with the ultimate increase seen as the cumulant of successive increments of spending, each a fraction of the previous one. The question "how much increase when" depends on the length of these "rounds" of income. If, when the multiplier is two, nearly 97 per cent of the ultimate effect is achieved within five "rounds," does this take five weeks, five months, or five years? This indeed is an important question, to which various answers have been given, none perhaps fully satisfactory.

I

One answer was that the time period depended on the speed with which money circulates, or, more precisely, on the marginal circular velocity of active money. This was the position taken in Professor

* The author is associate professor of economics at the University of Michigan.

[1] *Money, Debt, and Economic Activity* (Prentice-Hall, 1948) n., p. 190.

Fritz Machlup's well-known article "Period Analysis and Multiplier Theory."[2] The argument that attempts to identify the multiplier time period with the velocity concept usually runs in terms of a simple example.[3] Let us suppose that there is new expenditure, say by government, financed by "new money." This money is, let us say, paid out as income to leaf-rakers on Monday. On Tuesday, they spend a portion of this new money for consumer goods. This is not yet income, however. It will become additional income only as the added payment filters down through the economic system from retailers to wholesalers to manufacturers to raw material suppliers, and so on, with a fraction of it becoming income payment at each level (retailer, wholesaler, manufacturer, supplier, etc.) in the form of wages, profit, interest, or rent, and the rest moving along in intermediate transactions. There is, however, some *average* interval between initial income payment and the resulting secondary income payments. The length of this period can be seen to be both the length of the multiplier period, and, as well, the average time that it takes a dollar (or at least a marginal dollar of active money) to make the circuit from one income recipient to another.

Now the above argument is specifically based on the assumption that no "hoarding" or "dishoarding" occurs by business firms. Upon receipt of an additional stream of money payments, business firms, after their customary payment intervals, make enlarged money payments to factors of production and suppliers. None of the new money stream is added to "idle" balances, nor is money withdrawn from "idle" balances to finance new production or purchases prior to the receipt of the enlarged money flow which originated with consumers.

On the basis of the above assumptions the argument is undoubtedly correct. The length of the multiplier "round" depends upon payment habits, degree of integration, and the other institutional and psychological factors which determine the velocity of active money. Our quarrel is only with the realism of the assumptions.

Note first that this argument implies that money flows *precede* the reverse flow of goods. The retailer sends the new money to the wholesaler, from whom it reaches manufacturer and suppliers, who use the

[2] Reprinted in *Readings in Business Cycle Theory*, G. Haberler, ed. (Blakiston, 1944), pp. 203-34. Not quite the same point of view is expressed in Professor Richard Goodwin's article in *The New Economics*, S. E. Harris, ed. (Knopf, 1947), pp. 482-99. Professor Goodwin states that "It is obvious from the way the problem is stated, that the time from income creation to income creation implied in the velocity concept is the same as the over-all lag implied in the multiplier. . . . One should say, rather, that the two concepts agree if we mean the income velocity of active money" (p. 488). Goodwin, however, is careful to recognize that "velocity has no explanatory value" (p. 489), but rather merely that "multiplier analysis can make important use of the rich empirical evidence from monetary studies" (p. 488). See also n. 7, below.

[3] See, for example, Machlup's "primitive story" (*op. cit.*, p. 210).

new stream of money to finance added production (and income payments), following which the added goods move back up the stream to the retailer.

One very important fault with the assumption is that business is not ordinarily done this way. Rather, payment is made at each stage only *after* receipt of goods previously ordered. With his enlarged order, the retailer includes payment for his last, *normal-sized* shipment (assuming that he waits until payment time to enlarge his order, which, of course, he may not do). The wholesaler does the same. The manufacturer, like his suppliers *ad infinitum,* then receives an enlarged order, for which he will receive correspondingly enlarged money payment *after he ships the enlarged flow of goods.* With business done in this way the speed of the flow of the new money is seen to depend on the rate at which an added flow of goods is forthcoming, and there exists no logical reason for supposing that the rate at which production increases will bear any connection with any pre-existing speed of money flows. The sequence assumed in the money circulation argument seems to rest on the view that *money* is the limiting factor in determining the rate of production. Production cannot increase until the money arrives to finance the increase, and this added money will arrive on a schedule predetermined by customary payment habits, etc. But this makes for a logical impasse if money flows typically *follow* the reverse flow of goods; and, of course, it ignores the other *possible, necessary,* and *usual* means of financing added production through borrowing (either "new money" or someone else's idle balance), use of one's own idle balance, or liquidation of security or inventory assets.

This apparently is realized by Machlup when he remarks: "Through the medium of induced dishoarding on the part of business firms the actual propagation of incomes may be much faster than that which is possible on the basis of the circuit flow of money. For the present, however, we shall rule out induced dishoarding, as it has been ruled out by most writers on the subject."[4] But why should we rule it out if that is a necessary feature of the way business is done? And having refused to rule it out, it is clear that the speed of money flows makes little difference in the timing of the multiplication of income.

If, to take an extreme case, the retailer recognized, on the second day after the newly received money had been spent by the workers, that his business was expanding, and telegraphed an enlarged order to the wholesaler, who in turn immediately telegraphed an enlarged order to the manufacturer, who, the next day, activated an idle production line, new income would be generated almost immediately. If, on the other

[4] *Op. cit.,* p. 215.

hand, the retailer's and/or the wholesaler's expansion of the stream of new orders was delayed (inventories being drawn down at one or the other stage);[5] or, if the manufacturer chose to meet or was forced to meet the increased demand out of finished goods inventory for a considerable period, before increasing his rate of production and income payment, there might be a prolonged delay in the second increase in income, despite the fact that the new money spent by the initial workers had long since reached his hands.[6]

Presumably it is "induced dishoarding" that speeds up the process of income creation in the first of our two examples; "induced hoarding" that delays it, in the second. But what exactly is the "induced" hoarding or dishoarding?

The two cases clearly give different income velocities: the quantity of money is the same in both, the levels of income different. Machlup wants to explain this by saying that the quantity of *active* money (the velocity, or marginal velocity, of which remains constant) has been altered by some kind of an act of hoarding or dishoarding that we can appropriately "rule out." What is this "act"?

We suppose that both before and after the increase in income to, and increase in spending by, the first set of workers, all cash settlements are made, say, monthly, payment being made at that time for whatever goods were received during the previous month. Suppose further that there is no change in the degree of integration (there remain the same number of stages between which transactions must take place). The objective determinants of velocity have not changed. Nor, we suppose, has liquidity preference increased in the sense of a change in the attitude toward holding wealth in cash versus other forms. Yet in the one case we have dishoarding; in the other, hoarding. That is, money must have moved from "idle" to "active" balances, or *vice versa.*

One way in which we can *always* reach this conclusion is simply to define the quantity of "active" money as some stable percentage of income. Knowing income, we then know the necessary quantity of "active" money. The circuit velocity of "active" money is obviously constant, and we can always explain any deviation of the multiplier time period from the time period implied in our constant velocity by

[5] And if the manufacturer did not find out about the increased business by other means, and try to prepare for what he thought would be its impact on him.

[6] The irrelevance of money flows can be seen perhaps even more clearly in the reverse case—that of a decline in consumer demand. Does the manufacturer keep on making money payments to his workers at the old rate so long as money continues to flow to him at the old rate in payment for *previous* sales? Hardly. Once his orders decline, he is apt to reduce employment as rapidly as he can. To be sure, since the money flows continue, I suppose that he will be engaging in "induced hoarding" if he does this.

stating that "hoarding" or "dishoarding" has occurred. This obviously begs the question, and is of little help.

A second approach is to try to give to "active" money some definition which is independent of the level of income. For example, we could (with Machlup, *op. cit.*) define "active" money as the difference between average and recurring minimum balances. This gives the concept of active money an operational definition, permitting its measurement, and a testing of the assumption that the circuit velocity of active money so defined is constant. The author knows of no serious attempt to make such a test, however.[7] He has constructed hypothetical sequences of income and cash balance change, one of which indeed shows the ratio of active money so defined to income remaining constant during periods of income change, others showing wide and unsystematic variation of the ratio.

The real difficulty arises from the fact that while the quantity of "active" money may be a precise concept under stationary conditions, it breaks down when we consider income change. The quantity of "money work" that has to be done, or the quantity of "active" money, in a stationary economy is a precisely measurable amount. We can measure this amount by the difference between average and minimum balances, or perhaps in other ways, and find that for each period it remains a constant fraction of a constant income. Another way of putting this is to say that under stationary conditions, new production is self-financing. Receipt of funds in payment for a previous period's production provides the means to finance this period's income payment.

But when income changes, this is no longer true. If there is to be an increase in income payments, it must be otherwise financed. A decrease in income payments will release some means of finance. The quantity of "active money" loses its precision of definition. As a result, when income changes, the speed of the change will depend not on any previous speed of money circulation, but upon non-monetary factors of the sort we have suggested above, and will discuss in more detail in the next

[7] Goodwin (*op. cit.*) follows the second sentence quoted above (n. 2) by the statement: "Keynes always accepted the hypothesis that the velocity of active money is substantially constant. The evidence for such a constancy is considerable. The average income velocity in the United States for 1909-18 was 3.11, and for 1919-28 it was 3.08 according to Professor Angell. This constancy was maintained in spite of large variations in both money and income. By taking long periods, we have some hope of eliminating the effects of idle money."

But what does this prove? If we *assume* the velocity of active money is constant, we can attribute the short-run changes in total velocity to changes in the proportions of active and idle money. But the long-run stability of total velocity tells us nothing about the short-run stability of the velocity of active money; or even about its long-run stability. There might as well have been a downward trend in the proportion of active money and an increase in its velocity. Unless we give active and idle money operational definitions and measure the concepts so defined, we prove nothing.

section. If those factors result in a constancy of the circuit velocity of active money (under any particular definition) it will be mere coincidence. The speed of the process of income change depends primarily on these non-monetary factors.[8]

To summarise the argument of this part:

1. The velocity explanation of the multiplier time period seems to assume that availability of money to finance production (income creation) is the limiting factor in income change. Income payments cannot increase until the money arrives, and they will not decrease until the money flow decreases.
2. In the case of expansion, this involves a logical impasse, if, as is normally the case, changes in money flows *follow* changes in the reverse flow of goods.
3. In fact, other sources of financing must be, and normally are, available.
4. Dismissal of these other means of financing as "induced dishoarding" seems to involve the question-begging definition of active money that assumes its velocity constant in order to define it.
5. The actual factors which normally determine the time lag in the multiplier must be explained otherwise.

II

Professor Lloyd Metzler in a recent paper[9] approaches our question in a different way. He describes three lags in the process of income creation: first, the lag between a change in disposable income and a change in consumer expenditures (Professor Robertson's well-known "day"); second, the lag between a change in consumer expenditure and a change in production rates (during which time inventories absorb the change in spending); and, third, the lag between production, *i.e.*, income creation, and income payment (disposable income). He further demonstrates that such evidence as exists shows the first lag to be small or nonexistent, the second to be substantial though irregular, and the third to be substantial (primarily in the case of dividends) but unimportant. Without dismissing the first and third lags, let us, however, direct our attention to some factors determining the length of the second lag—the period between an enlarged (or diminished) rate

[8] Naturally, there are necessary mathematical relations between money turnover periods and the time period of the multiplier. Knowing the time rates of change of income and money supply we can compute the time rate of change of velocity, and vice versa. And if we define the quantity of active money as a constant fraction of income, there is a mathematical relationship between the time rates of change of income and of the shift from idle to active balances.

[9] "Three Lags in the Circular Flow of Income," in *Income, Employment, and Public Policy: Essays in Honor of Alvin H. Hansen* (Norton, 1948), pp. 11-32.

of consumer spending and an enlarged (or diminished) rate of production and income creation.

Let us assume, to begin with, that sellers at each level of production are initially satisfied with their inventory positions at the level of sales currently taking place, and proceed to consider the effects of an additional stream of expenditures on final goods, not anticipated by sellers. The immediate effect will be a reduction of the inventories carried by sellers of final goods, making them now dissatisfied with their inventory positions, and leading them to take some action to increase their purchases or production. There are two questions here that we shall attempt, as best we can, to keep separate, for we are primarily concerned only with the second of them. The first has to do with the *magnitude* of their reaction, the second with its *timing*. Only under very special circumstances will the addition to their purchases or production be of the same magnitude as the increase in their sales. If, for example, they wish to keep inventories a constant percentage of sales, and they expect the new rate of sales to continue, purchases or production will increase by more than sales. Or, if they project the increase in sales to mean that further increases will follow, purchases or production will increase by more than sales. Although this difference in magnitudes will affect the value of the "truncated multiplier"—its size as of some specific date—it will not affect the ultimate size of the multiplier when the new equilibrium is achieved; nor do we see any reason to believe that it would materially affect the *length* of the multiplier "round."[10]

The increase in sales will lead sellers to take action which will, after some lag, result in enlarged income. How long will it take for the enlarged income to be realized, whatever the degree of enlargement may be? The problem is of course complicated by the fact that the enlarged income, when received, will normally lead to further enlargement of sales of final products, to further enlargement of income, etc. And since some of the income generated by the first stream of new expenditures will be received quickly, part of the "second round" (or even the third or fourth) may begin to be felt long before the first is completed. But

[10] The result of this lack of balance in magnitudes may well create a cyclical pattern of adustment. See L. A. Metzler, "The Nature and Stability of Inventory Cycles," *Rev. Econ. and Stat.*, Vol. 23 (Aug., 1941), pp. 113-29. We have only this comment on Professor Metzler's results. His model sequences assume a single, uniform lag of income creation behind sales. This period's sales, together with the seller's idea of the inventory he wants to keep, determines next period's production and income creation. When it is recognized that part of the income will be created immediately, other fractions at varying intervals thereafter, the results are far less clear. We have, in fact, not a single lag but a distributed lag. This should certainly dampen severely the cycles shown to result from his model. Put otherwise, Metzler's model has only one level of production and of inventory holding, instead of the many levels that in fact exist.

what we want to know is how long *one* round takes. What will determine the average time period between a new expenditure and the income creation that results from *that* expenditure? It may not necessarily be true, however, that the average length of second, third, fourth, and subsequent rounds will be the same as the first, a complication difficult to deal with, but noted below.

We can, I think, isolate several factors determining the length of the time between a disinvestment in inventory, and the subsequent act of income creation. They include:

1. *The time that it takes for sellers to realize that their rate of sales has increased relative to their rate of purchases or production.* Even if a seller desires to maintain a fixed stock, or stocks as a fixed percentage of sales, he needs some time to assure himself that what has occurred was other than a random fluctuation in his sales volume. Presumably, the more erratic his normal daily or weekly or monthly sales, the longer it takes him to sort out the genuine increase from a mere random fluctuation. This lag occurs at each level involved in the production of the good—retailer, wholesaler, manufacturer, supplier, supplier's supplier, etc., and the lags are additive.

2. *The time interval between the giving (or acceptance) of orders.* If orders are given (or accepted) weekly, a realization of a changed sales rate can quickly make itself felt at the next level. If sellers open their books only quarterly, or even annually, then the lag is much greater. These lags are also additive.

3. *The time that it takes to transmit orders.* Unless used to include (1) and/or (2) this is probably short, although again additive.[11]

4. *The time that it takes to change the rate of production.* Assuming, still, that the seller at each stage desires to keep a constant or proportional inventory, and, whenever he realizes his rate of sales has increased, immediately takes steps to increase purchases or production, there are physical limitations to the speed with which he may do so. These limitations include, of course, the time necessary to activate idle machinery, and to hire and, if necessary, train or retrain workers. But there is also an important limitation based on the existence or nonexistence of inventories at each stage of production. Assume an increased level of disposable income has increased retail sales of shoes; retailers have immediately increased their orders to wholesalers, who have immediately increased their orders to manufacturers. The shoe manufacturer cannot start increasing his rate of shoe production (and

[11] Lags (2) and (3) can be short-circuited if sellers attempt to predict orders rather than merely wait for them. If, for example, a shoe manufacturer receives current data on retail shoe sales, he may determine his production rate in advance of the receipt of actual orders.

income creation at his level) *unless he has inventories of leather in excess of minimum working requirements.* If the manufacturer has no inventory of leather, he must get it from his tanner. His tanner in turn can supply him only if he has more than minimum inventory of leather. If not, the tanner must first increase his input of cured hides (and output will increase only some weeks later). But this he cannot do unless he or his supplier has excess inventory of cured hides. If there are no such inventories, hides must be cured at an increased rate (I hesitate to suggest that cows must be killed—even bred—at an increased rate, yet, unless there are inventories, this is the case); cured hides must be tanned; tanned hides made into shoes; and shoes wholesaled and retailed. The whole process may take many, many months.

On the other hand, if there are inventories of goods at each stage (raw materials for the next stage), *if* a realization that sales have increased occurs quickly at each stage, *if* orders increase immediately when sales increase, the whole process may take only a matter of days or weeks.[12]

It is interesting that an argument can be developed here which is almost the exact opposite of the money circulation argument. Assume that no seller carries any "excess" inventories. Then when the signal is given for increased production, the process has to start at the very bottom. Work cannot be done at an increased rate at stage 2 until goods arrive at an increased rate from stage 1, and so on. If this is the case, the lag in income creation (in addition to the other relevant ones) will amount to approximately one-half the fabrication time.[13] In this view, it is not the arrival of *money,* coming *down* the line from con-

[12] Although our attention has been concentrated on the problem of speed of income increase, it should be noted that all of the lags up to this point except this last one operate also in the reverse case—the shrinkage in income resulting from an initial decline in spending. Instead, however, of the existence or lack of existence of inventories, we have as the crucial factor the length of irrevocable commitments to suppliers and factors. Even here, however, inventories cannot be neglected. If, at any stage, a seller has inventories which exceed the necessary minimum, he can contract his production (income payments) and/or orders prior to the completion of his contract, and fill the balance of it from inventory.

[13] See Goodwin, *op. cit.*, p. 488. Goodwin attributes the discovery of this principle to Frisch. However, the essence of this view appears in Taussig's *Wages and Capital* (Appleton, 1896, page references to 1915 edition). In Chapter IV, "The Elasticity of the Wages Fund," Professor Taussig argues that the real income of the community is rather inelastic in the short run, because the current flow of final output is largely predetermined by the nature of goods in process. "What is now available, and what will be available for a year or two to come, has been determined once for all. If all the active members of the community work harder or more effectively [or, what Taussig was precluded from saying, if there is fuller employment], they may secure more enjoyable things after a space; but present income depends on the manner and the extent to which the preparatory stages of production have been carried on" (pp. 88-89).

sumers that delays the process, but arrival of *goods,* coming *up* the line from "ultimate" producers that is relevant.

Now both views are wrong, and for the same reason. The reason is that there are typically at hand, or readily obtainable, inventories both of money and of necessary materials. Hence production rates are normally more flexible than either view might suggest. The approach that makes *money* flows the limiting factor assumes (tacitly or otherwise) that sellers fail to carry idle balances—or that others fail to carry them available for lending or security purchase. Why is this assumption made? Because money is needed as a medium of exchange and for no other reason. Hence no one holds an "idle" balance. If he holds cash at all, it is only to bridge the gap between an in-payment and an out-payment. He lends out any excess. Idle balances are sterile, and gain-motivated firms and individuals will shun them. For the same reason no one holds "excess" inventories of goods. They are sterile, hence do not exist.[14]

Now neither view is carried to the extreme. Since in-payments and out-payments fail exactly to coincide, and because extremely short term lending and borrowing are obviously impracticable, balances are not "idle" if not larger than necessary to meet recurrent peaks in the need for cash. (Though whether a balance more than enough to meet, say, weekly or monthly peaks but not larger than necessary to meet, say quarterly or annual peaks is "idle" is a moot question.) Likewise, since deliveries and shipments do not coincide exactly with production flows, and small deliveries or shipments are impracticable, inventories are not "excess" if no larger than necessary to meet recurrent peak needs. (Again, there may be ambiguity in precise definition, though this is unimportant.)

The question really is whether and why individuals and firms hold larger inventories of money or goods than are necessary for the above purposes, which can be described as "transactions demands" for money and inventories respectively. One reason is the speculative one. Money is held awaiting an expected rise in its "price"—*i.e.*, an expected fall in the price of debt. (It is not held—theoretically—waiting a fall in the price of goods; for, unless the price of debt is likewise expected to

[14] Taussig (*op. cit.*, p. 89) recognizes the possibility that inventories might provide slight flexibility, but argues: "Every dealer keeps enough in stock to meet current demand, and tries to keep no more. It is to his advantage to diminish his holdings to the minimum consistent with satisfying his customers. For every business manager, whether merchant or manufacturer, a needlessly large stock similarly means a needlessly large committal of his funds. . . . The drift in all must be to accommodate the supplies to habitual and expected demands, and to keep no excess." It is interesting that in earlier passages, Professor Taussig emphasized the elasticity of the money supplies from which wages could be paid and materials purchased.

fall, the money can be loaned out—at interest—while awaiting the fall in the price of goods.) There is a parallel "speculative" reason for holding goods—to await an expected rise in their price. Another reason for holding idle money—and excess inventories—is the precautionary one. They are held to be ready for some unexpected demand for their use on short notice—the failure of a debtor to make an expected payment, or the failure of a supplier to make an expected delivery.

What Professor A. G. Hart (and others) have increasingly emphasized in recent analyses of *money* holding is the importance of uncertainty in connection with all of these motives, although particularly in connection with the precautionary one. Hart argues that what is wrong with most previous analyses of the motives for holding money is the tacit assumption of certainty (or a "certainty equivalent") as to future needs. He points out that even the transactions demand depends on expectations with respect to the future (what are the peak requirements for which money will need to be held?), and hence, with uncertainty, merges into the precautionary one. His "linkage of risk" and "financial respectability" principles are further used to explain why uncertainty leads to the desire for liquidity.[15]

Our emphasis is a parallel one. Uncertainty as to the future leads not only to monetary liquidity, but as well to the holding of inventories larger than theoretically necessary simply to facilitate the *current* flow of production. Just as the transactions demand for money depends on expectations, which if uncertain, lead to the holding of balances larger than necessary to finance most probable needs, so uncertainty as to future sales leads to holding of inventories in excess of those necessary to meet most probable circumstances. A prudent businessman in an uncertain world ought to hold "idle" money (although it is sterile and may depreciate as against goods or debt); and he ought also to hold "excess" inventory (although it is sterile and may depreciate as against money or debt). Unless he is willing to speculate on a fall in interest rates or a rise in goods prices—and it takes more than mere uncertainty to make him want to speculate—he will hold money. Unless he is definitely expecting a fall in goods prices he will hold excess inventories. For not to have the money or the inventories when needed to meet an unexpected, but always possible, increase in demand or failure of supply would mean missing an opportunity to profit.[16]

Again, this statement needs qualification. He need not hold idle money if he is sure he can borrow (or has reasonably liquid assets).[17]

[15] *Money, Debt, and Economic Activity* (New York, Prentice-Hall, 1948), pp. 198-208.

[16] Hart, *op. cit.*, p. 523, makes a similar comparison of money and inventory holdings.

[17] Thus, to some extent, idle money and excess inventories are alternatives.

And he need not hold excess inventories of what are (to him) raw materials if he knows that his supplier holds excess inventories of what are (to the supplier) finished goods. All this means is that there must be knowledge that *someone else* has excess inventories of money or goods if a prudent businessman is not to hold them himself.[18]

It is interesting to note, however, that just as there may be monetary liquidity available to an individual but not to an economy (one firm can borrow or dispose of securities, but perhaps only if everyone else is not simultaneously trying to), there may also be an illusive sort of inventory "liquidity." Each individual buyer of a good may know that his supplier carries sufficient excess stock to meet his unexpected peak demands; but if one firm supplies many purchasers, and if all purchasers try to obtain increased supplies at once, none may succeed in any measure in doing so. This is especially true the farther "back" we go toward common basic materials used in many industries.[19]

There is an interesting difference, however. The extra monetary liquidity can be created by commercial banks, or, if not, by central banks, almost at the stroke of a pen. This is particularly the case with respect to the kind of money needs we are talking about here—to finance current output—in a banking system, like ours, designed to provide a flexible money supply to facilitate just this kind of a process. The same is not true for stocks of goods. There is another important difference, of course. Money has no carrying charges; many kinds of goods do (storage, insurance, physical deterioration, risk of obsolescence). These factors operate to restrain inventory holdings—to induce firms to sacrifice flexibility, despite its advantages.

Both of these differences suggest that, as between inventories of money and goods, it may more frequently be lack of inventories of goods that constitutes a bottleneck factor in expansion of output. Clearly neither inventories of goods nor money could ever constitute a technical bottleneck to contraction. In general, however (and generalities here become not too useful) sufficient flexibility seems to exist in most lines of output to permit moderate expansion without serious bottlenecks or delays while production flows are expanded "from the

[18] See, for example, the interesting discussion by M. Abramovitz, *The Role of Inventories in Business Cycles,* Occasional Paper 26 (National Bureau of Economic Research, 1948), pp. 8-10, in which a contrast is made between the inventory behavior of manufacturers' stocks of raw rubber and raw silk. Stocks of the latter are held by dealers, and manufacturers' stocks adjust quickly to changes in output. Stocks of the former are held by tire manufacturers, and their movement is inverse to that of tire production. Presumably, *average* manufacturers' stocks relative to sales are much larger for rubber than for silk.

[19] But just as many firms, having painfully discovered the illusiveness of the liquidity of securities or goods or lines of credit, have learned to hold idle money, so, surely, many firms recognize the need to hold excess inventories themselves rather than to count on being able to acquire them rapidly.

bottom up." More detailed consideration of individual industries will doubtless lead both to illustrations of this as well as to the recognition of certain exceptions.[20]

We have argued, thus far, that firms have normally reason to hold inventories in excess of those needed for "transactions purposes" (analogous to the "transaction demand" for money). And, if they do, we have shown that the availability of excess inventories at each stage in a production process will permit the flow of income to be expanded much more rapidly than if such inventories did not exist. The contrasting case would be one in which (a) *no* excess inventories were held, *or* (b) *only* inventories of final products. In either case, an increase in demand for final products could lead only to a slow expansion of production and income, as goods moved up the line from the earliest stages of production. Cases (a) and (b) do present in themselves interesting contrasts. If there were no excess inventories even of finished products, an increase in demand could succeed only in bidding up prices, first at retail, and then successively "down the line" toward the earliest stages of production. Sufficient expansion of output "from the bottom up" would presumably ultimately bid prices back down again if contractual money rates of factor remuneration had not in the meantime been raised. But real spending on final goods could not increase until real income (production) increased. In the other case, inventories of final products could permit an increase in real spending to take place prior to an increase in real income, without the same pressure on prices, the increase in spending on final products being offset by disinvestment in inventories of final products during the period in which output and income were gradually rising. Our point has been that this period of disinvestment can be much shorter if there are inventories at each stage to be temporarily drawn down while income the more rapidly rises.[21]

However, and this is important, the existence of inventories at each stage may *permit* a more rapid expansion of income than would other-

[20] See Abramovitz (*op. cit.*) for emphasis on, and illustrations of the different inventory situations of manufacturers. It should be noted, however, that the frequent showing by Abramovitz of long lags of inventory changes behind output, or even of inverse movement of inventories and output, strongly reinforces our view that inventories are typically in excess of "transactions" needs. Otherwise, stocks and output would have to move together.

[21] After the preceding pages of Part II had been written and rewritten many times, the author discovered that much of their substance is included in the long paragraph on page 288 of Keynes' *General Theory*, a paragraph that he had read many times, without, apparently, full appreciation of its import. As Hansen remarks: "Time and again when I thought I had discovered this or that error in the Keynesian analysis, . . . I have been surprised to find how often, on examination, the point had already been anticipated and covered in the *General Theory*" (*The New Economics*, p. 136).

wise be possible, but it does not *guarantee* it. In fact, the existence of inventories at each stage may very well make the process of income expansion much slower than would be the case if they did not exist. Suppose, for example, that at each stage of production there were substantial excess inventories both of finished products (for that stage) and of raw materials (for that stage). Suppose, further, that the behavior of each seller were as follows: when demand increases, meet the enlarged demand out of excess finished goods inventory as long as possible before increasing the rate of production. Then use up excess raw material inventories for as long as possible before buying more. The supplier of the added material in turn does the same, and so does his supplier, etc. Under these circumstances the expansion of income might be terribly slow. Since inventories are larger, the period during which real spending can increase at the expense of inventory disinvestment is likewise much greater. A full "round" of income payments might be very long.[22]

This leads us to consider the circumstances which might lead to inventory decisions of the sort described above. Why might a seller choose to disinvest in inventories rather than to increase his rate of production and/or purchases? Several sorts of reasons can be distinguished.

1. The first reason has already been accounted for in the first of our previous list of "lags." It is, namely, that sellers may have trouble distinguishing a genuine increase in sales from a mere random fluctuation. Since we have already counted this as a source of delay, we should not count it again. But this category can be made to expand more or less indefinitely, unless we draw a line that is indeed difficult to draw. The cases of "perverse expectations" can be fitted in here with only a slight stretch of the definition: sales increase, but *because they have increased,* the seller concludes that they will be lower later on, and avoids taking action to increase his supplies. While, if there is an inventory cushion, perverse expectations do not lead to the disturbing results that can be shown to exist in a model in which there is no such cushion, such expectations might indeed result in substantial delays in income change. What seems to be involved is the question of the length of the seller's horizon: what is the future period concerning which he has formulated an expectation as to average sales, within which period he interprets

[22] One should suppose that this policy would lengthen only the first "round." For subsequent rounds, there would then be no excess inventories to delay the process of income expansion. But this very exhaustion of excess inventories would then prolong the second round as well, by forcing production to be expanded "from the bottom up." Here, however, our method begins to break down, for, since *some* of the income increment will have been paid out early, the second and third rounds will begin to be confused with the first, leading to numerous complexities.

a rise in demand merely as a chance fluctuation, to be followed by an offsetting decline which will restore the average to the level he has anticipated? Does he have any concept akin to the statistical concept of probable error, and react only when the change in sales is sufficiently great to be hardly explainable by random forces? My opinion is that we do not know enough about opinion-formation, planning, and the revision of plans in business firms to be able even to suggest realistic considerations with respect to this case.

2. A second reason for allowing inventories to be drawn down is like the first, although, I think, capable of distinction. A seller realizes, let us suppose, that sales have increased, and interprets it as a genuine increase, one that will require increased production and/or purchases to restore his inventories to their previous level (which, while in one sense "excessive," is nevertheless the level he desires to maintain). But one of the purposes of holding excess inventories (which we intentionally omitted from our previous discussion) is to allow the seller some leeway in adjusting his rate of production to every change in sales. If he had no inventory of finished goods other than enough to meet random fluctuations and delivery discontinuities, every rise in demand would require either an immediate change in production rate, or a rise in price or rationing of his customers. And, likewise, if he were to avoid greater inventories, he would need promptly to turn down his rate of production every time sales declined. Now such frequent changes are awkward and costly. Much better to use inventories as a cushion. When demand rises, he then has time to assess the probable extent and duration of the increase, and to adjust his production rate more deliberately and efficiently. But this may also be a source of lag. Inventories are held as a cushion, and they are allowed to do their cushioning.[23]

3. A third reason why sellers might deliberately allow inventories to be drawn down could be found in the situation in which sellers' inventories were initially larger than they desired to keep. Although we can dismiss this case, theoretically, as outside our domain (multiplier discussion usually assumes initial equilibrium), practically speaking, the importance of this case cannot lightly be dismissed. A fiscal planner considering the effect of increased spending ought to take account of excessive inventories ("excessive" now used to mean not merely in

[23] Abramovitz makes this point explicitly for manufacturers' stocks of finisher staples (which, at least in short cycle phases, move inversely to output): "In view of the perennial uncertainty surrounding the business future, manufacturers wish to minimize the costs involved in changing their rate of operations, of which the chief is probably the cost of dispersing large numbers of workers who may have to be reassembled in the not distant future" (*op. cit.*, pp. 18-19).

excess of transactions needs, but in excess of desired holdings). Such excessive inventories may seriously delay at least the first "round" of the propagation of income.[24]

But a policy of allowing inventories to decline has its counterpart in a policy of attempting to build up inventories. To the extent that such occurs, this can be interpreted as a case in which income is created prior to or concurrently with the expansion of sales, and can be described as a case in which the lag in the multiplier is negative or zero.[25]

The real question, into the very middle of which we have now plunged, is whether to treat inventory investment or disinvestment as exogenous or as endogenous. The declines (increases) in inventories experienced by sellers who have not expected an increase (decrease) in demand are clearly endogenous, and their attempts to restore the *status quo ante*, which lead to a subsequent change in income, can reasonably be described as part of a lag between demand and income changes. Indeed, the multiplier theory makes no sense at all in a dynamic setting unless we do go behind the initial act of disinvestment and consider the subsequent act of income creation. But any very realistic analysis of the process requires us to recognize that inventory policies are apparently not confined to the mere attempt to maintain stable inventories. Professor Abramovitz, as already noted, finds that inventories of staple manufactured goods in the hands of their producers typically vary inversely with output, *i.e.*, there is inventory disinvestment while out-

[24] Reasons 1 and 2 in the above list presumably merely affect the timing of the multiplier, not its ultimate size. Ultimately, inventories will be restored to some "normal" level. Reason 3 could be described as a reduction in the size of the multiplier rather than a delay in its timing. It can be thought of both as a lag and as a reduction in the size of the multiplier if expansions typically turn into contractions before inventories are built up to "normal" and contractions turn into expansions before inventories are reduced to "normal." See J. R. Hicks, *The Trade Cycle* (Oxford University Press, 1950), Chapters 2 and 3, for demonstration of how consumption lags can reduce the effective size of the multiplier when investment fluctuates back and forth. The same is true of inventory lags.

[25] See the summary by Ruth P. Mack of preliminary findings of her study of the shoe and leather industries which appears in *The Cumulation of Economic Knowledge* (Twenty-Eight Annual Report of the National Bureau of Economic Research, 1948), pp. 42-44. "We find that hide marketing, leather tanning, shoe production and retailing all seem to reach peaks or troughs more or less together. This is true, moreover, not only of movements associated with business cycles but also of minor movements clearly identifiable in the shoe, leather, and hide industry. . . . Orders placed by retailers or wholesalers with shoe manufacturers appear to be the gear connecting retail sales and production. Orders for shoes seem to reach peaks and troughs about two months ahead of sales, and since this is also approximately the period by which orders precede production of shoes, synchronous timings of retail sales and production results." This might be described as a zero multiplier time period (or even negative, since income payments must reach peaks and troughs somewhat before shoe production). The process by which the necessary forecasts are made, and corrected, is given highly condensed discussion in the reference.

put expands and investment while it contracts. As he shows, this can hardly be accounted for merely as a lag of adjustment.[26] Yet for industry as a whole, investment in inventories fluctuates directly with business cycles, with the turning points of inventory investment apparently coinciding closely with turning points in general business activity. Inventories (as opposed to inventory investment) lag perhaps six months behind activity at turning points but thereafter move in the same direction.[27] Thus inventory investment accompanies income expansions, and inventory disinvestment accompanies contractions.

If we could appropriately consider all inventory change as endogenous, we could, perhaps must, consider inventory policies as factors contributing to the determination of the size and timing of the effective multiplier. But, in the present state of our knowledge, it may be more appropriate to consider some part of inventory change as exogenous—*i.e.*, to recognize that the forces which relate income change to inventory change are so complicated and variable that we cannot include them in our model. This latter choice, however, although probably forced upon us, almost requires that we abandon any attempt at realistic analysis of the multiplier time period. For, if a rise in final demand is preceded, accompanied, or followed by a rise in inventory demand, we surely cannot distinguish the timing of that part of income creation which arises from the increase in final demand from that arising from the new inventory demand, and hence can say nothing very useful about the timing of income change.

Perhaps by this time we have sufficiently succeeded in demonstrating the difficulties of determining "the" time period for the multiplier. If changes in spending are foreseen, the effect may be extremely rapid; if sellers react "passively," by changing production and/or purchases as rapidly as feasible, the delays may be slight or extensive depending on numerous factors, the one of which we have emphasized being the existence or non-existence of inventories at each stage in production; yet the existence of such inventories, which *permits* expansion to be more rapid, also permits sellers who do not react passively to delay the speed of income propagation very substantially; and the "exogenous" changes in inventories which in fact accompany income changes prevent us from isolating the time period of the multiplier in the true sense.

In other words, what we are suggesting turns out to be not another

[26] *Op. cit.*, pp. 17-18. The above statement is modified for unusually long expansions or contractions: inventories begin to turn down in the late stages of long contractions and to turn up in the late stages of long expansions.

[27] *Op. cit.*, pp. 3-5.

theory of the multiplier time period, but rather that no neat theory can be appropriate. We reject the approach that makes a previously existing speed of money flows determine the time period; nor does the view that it depends on fabrication time seem much better. That there may be a substantial lapse of time in the operation of the multiplier is clear; empirical studies might even succeed in disclosing some regularity in its duration. But there appears to be no simple basis for the determination of its length on abstract grounds.

III

The theory of the multiplier is ordinarily developed in a setting of assumptions in which labor and fixed resources are assumed to be under-utilized. That is, we assume that there is idle labor seeking employment and that there are either idle machines or at least that existing machines can be utilized more intensively with little or moderate loss of efficiency. For these reasons, we ordinarily assume that output and income are "flexible"—*i.e.,* can be expanded readily in response to rising demand.

But in any considerable expansion of output, or in any expansion whose form is different from that of previous expansions, shortages of particular kinds of labor or fixed assets may also occur at various points in the economy. Or, if the expansion takes place after a plateau of low output long enough for idle fixed assets to have been worn out and not replaced, bottlenecks of fixed asset capacity may also frequently be encountered. What essential difference in treatment does this require?

Consider first a bottleneck of fixed asset capacity. In terms of *physical limitations* on speed of output and income expansion, it only adds the fact that such assets are often not carried in inventory, and frequently take long periods to construct. But a far more important difference is that these aids to production are durable. They will not be used up in producing added current output necessary to meet currently enlarged demand. This has two consequences for our analysis: (1) if the decision is made to acquire them, there is an additional primary increment in income (injection) equal to the difference between current depreciation of such assets and their total cost—to buy a current unit of asset service you also must buy now many future units of asset service; and hence (2) the decision to accquire them depends not only on current demand for the product for which the asset service is desired but also on the expectation of future demand. As a result of this fact, the asset may not be acquired even though there might be the possibility of present profitable use of the asset service, and, on the

other hand, it may be acquired even if there is not immediate need for its service if such continuing need is expected to occur in sufficient volume in the near future.

Likewise, it is clear that bottlenecks of labor of particular kinds or at particular places may prevent the expansion of employment and output. A theory of income flexibility in a larger sense cannot therefore be constructed without extensive and careful analysis of these bottlenecks and how they are broken. Detailed consideration here would lead us far afield. It should be clear, however, that even in a less-than-full employment economy, the multiplier theory, and particularly any dynamic discussion of multiplier time periods, is seriously incomplete and misleading if it ignores bottleneck problems.[28]

The theory of the multiplier is a bold and challenging piece of analysis. But it is true only as a first approximation, under ideal conditions. Not only does income change only by a process that takes time, but to determine the speed and extent of that process involves an analysis of business practices, attitudes, responses; of technical conditions of production and supply; of consumer behavior, income distribution, lay-off and hiring procedures; of indirect impacts on government budgets through effects on tax collections, transfer payments, social security contributions; of indirect impacts on the money market; indeed of every aspect of the economic process. To understand them we need a vast fund of institutional knowledge about the business system, and, perhaps even more important, an understanding of the psychological frames of reference of business firms and individuals, which determine the way in which and the speed with which they respond to changes in objective facts.

A War Production Board trying to estimate the speed with which a less-than-full employment economy could achieve full production for war would find the multiplier theory of little practical use in planning. I hasten to add, of course, that a War Production Board which ignored the multiplier effect—*i.e.*, the induced consumption demand accompanying rising income—would do a very bad job of planning indeed.

[28] We should, however, note an asymmetry here. These bottlenecks operate only to restrain expansions, not to delay contractions. The same was true, it should be recalled, of possible shortages of money and inventories.

NEW IDEAS IN THE THEORY OF INTERNATIONAL TRADE

By ROBERT W. STEVENS*

I. *Introduction*

Postwar experience with the General Agreement for Tariffs and Trade and various other international economic organizations continues to validate a remark made by Lloyd Metzler that "The practical conduct of international trade is . . . much more a problem of negotiation and compromise than the classical economists believed."[1] It is the purpose of this paper to investigate some recent contributions to the theory of international trade which are closely related to Metzler's widely shared opinion. These contributions are based upon the central idea that the economic judgments of those in control of a country's international trade can be given formal theoretical expression, and the advocates of the new approach purport to provide us with a clear-cut graphical representation of the economizing activities of ruthless and short-sighted national states. Their methodology relies upon curves of reciprocal demand and community indifference which were first developed by Marshall and Edgeworth. After a summary of the methodology and a discussion of some of its novel implications, reasons are advanced in a final section for finding it unacceptable.

II. *Foundations in Marshall and Edgeworth*

In *Money, Credit and Commerce,* Marshall introduced his sections on reciprocal international demand by relating them to Mill's pioneer analysis of the subject. In order to conduct his analysis in real terms, Marshall wrote, "Mill took a yard of cloth as representative of the products of one country and a yard of linen as representative of the products of the other. But it seems better to suppose either country to make up her exports into representative 'bales'; that is, bales, each of which represents uniform aggregate investments of her labor (of various qualities) and her capital."[2] By adopting this expedient, Marshall was able to express the international commodity supplies

* The author is with the Economic Cooperation Administration Special Mission to the United Kingdom. The views stated are personal views only.

[1] Lloyd A. Metzler, "The Theory of International Trade," in *A Survey of Contemporary Economics,* Howard S. Ellis, editor (Philadelphia, Blakiston, 1948), p. 252.

[2] Alfred Marshall, *Money, Credit and Commerce* (London, Macmillan, 1923), p. 157.

and demands of two countries in "bale units" whose embodiments of resources remain constant even though the actual commodity composition of trade is constantly changing.

Diagram I is adapted from the schedules and diagrams which Marshall used to illustrate two countries' reciprocal demand curves

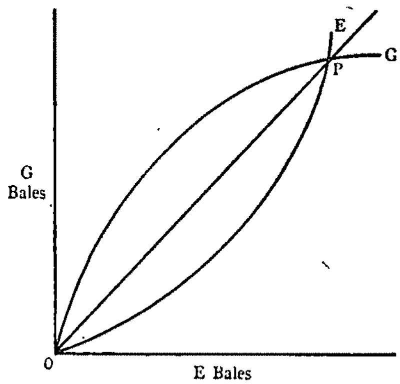


DIAGRAM I

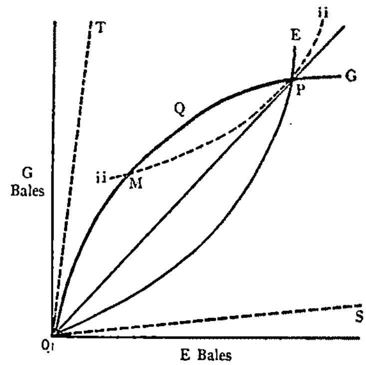


DIAGRAM II

(or offer curves) on a single plane.[3] OE represents England's offer curve and OG represents Germany's. OE shows that if only a few G bales are available in England, they would command a high price in terms of E bales, and that their value in England would fall as more of them are supplied. Marshall points out that it is a *supply*-and-demand (or *reciprocal*) demand curve because it also reflects the fact that England can supply (offer) more and more E bales only at progressively higher prices in terms of G bales. The same conditions of course apply to OG, and a moment's inspection will show that under free trade conditions a stable equilibrium will be established at P, with the slope of OP reflecting the price (terms of trade).[4]

Edgeworth, who was familiar with Marshall's method long before it appeared in *Money, Credit and Commerce,* indicated in a preliminary way how community indifference curves could be used on the Marshallian plane.[5] To Marshall's curves he added OT and OS

[3] *Ibid.* p. 162 and p. 331.

[4] Besides Marshall's own exposition, lucid accounts of his curves of reciprocal demand may be found in G. Haberler, *The Theory of International Trade,* translated by Alfred Stonier and Frederick Benham (London, George Allen and Unwin, 1937), pp. 150-59; and in J. Viner, *Studies in the Theory of International Trade* (London, George Allen and Unwin, 1937), pp. 541-47.

[5] Francis Y. Edgeworth, "Theory of International Values," *Econ. Jour.*, Vol. 4 (1894), pp. 35-50; 423-43; 606-38.

(Diagram II), portraying the domestic constant cost ratios of producing in Germany and in England, respectively, the goods that enter into their international trade. Then, assuming constant costs, OT and OS provide limits within which the terms of trade between the two countries must fall, since trade would not take place outside the limits thus established. He noted that, abandoning the constant costs assumption, one might substitute "a curve of constant advantage, or 'indifference curve' . . . representing states for which the advantage . . . is no greater than if there had been no trade." Assuming increasing costs in both countries, such curves would "curl inward" from OT and OS. He did not draw them, nor did he specify the existence of "families" of such indifference curves representing for each country successively greater total satisfaction from trade. Instead, he drew *one* such curve to illustrate the result of an English tariff which would move the equilibrium point to the left along OG. (A tariff would distort a country's offer curve in this way because it would reduce the country's demand for imports.)

Edgeworth's community indifference curve is the broken line ii in Diagram II. It must be tangent to the OP vector at P because under free trade, trade would be carried to the point where E's exporters-and-importers are on the highest possible indifference curve, given the terms of trade (OP). That is to say, a reciprocal demand curve *is* the locus of points of tangency between the indifference curves of the trading unit and the terms of trade (or price lines) it might face. Thus OG is for Germany a locus of optimum positions for steadily improving terms of trade and OE is a similar locus for England. It follows that a reciprocal demand curve *implies* a family of indifference curves.[6] We shall return later to the use which Edgeworth made of his diagram.

III. *The Country As a Monopolist*

First, it will be useful to outline the recent further elaboration of these early contributions by Marshall and Edgeworth. The contemporary writers examined below are assuming a "classical world" in which a tariff does not alter the level of domestic employment, but does secure an improved "swap ratio" of exports for imports. Thus we have an approach which is related to the terms of trade argument for tariffs, but not to the level of employment argument.[7]

[6] For another application of this methodology see J. T. Dunlop and Benjamin Higgins, "Bargaining Power and Market Structures," *Jour. Pol. Econ.*, Vol. 50 (Feb., 1942), pp. 1-26.

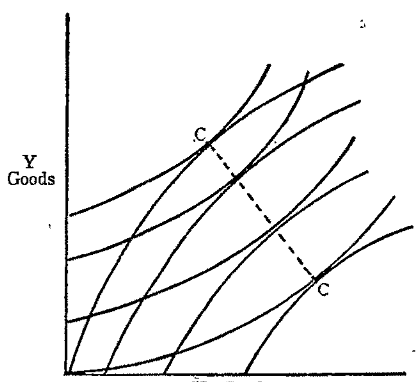
[7] Besides the articles cited in the text, the reader may wish to consult certain other sources. An important and relatively early contribution was made by W. W. Leontief in "The Use of Indifference Curves in the Analysis of Foreign Trade," *Quart. Jour. Econ.*,

We may begin with Samuelson's demonstration[8] that under free trade the intersection of two countries' reciprocal demand curves would necessarily lie on what is conventionally called the contract curve in the theory of bilateral monopoly, and that no movement is possible along this curve that would benefit both parties.[9] Moreover, any such movement would necessarily injure the interest of one of them. Furthermore, as Samuelson points out, "There is absolutely no presumption whatsoever that (the free trade) equilibrium point is superior in any sense to any other point on the contract curve" for no welfare judgments are possible about movements on the contract curve. This is so because welfare positions in the two countries cannot be compared meaningfully. He proceeds to point out that the free trade equilibrium point would not be the "best" position on the contract curve for either single country, because each would prefer to be at the intersection of the contract curve with a higher one of its own indifference curves. Samuelson concludes, therefore, that "one country behaving like a competitor, it can be shown that it is always to the

Vol. 47 (May, 1933), pp. 493-503. However, his approach is not, strictly speaking, in the Marshall-Edgeworth tradition of reciprocal demand. Kaldor's *Economica* article cited in note 10 below contains a useful diagram showing the essential nature of community indifference curves and W. M. Baumol, "The Community Indifference Map: A Construction," *Rev. Econ. Stud.*, Vol. XVII (3) No. 44 (1949-50), pp. 189-97, elaborates with considerable refinement the technique of their construction. I. M. D. Little, in "Welfare and Tariffs," *Rev. Econ. Stud.*, Vol XVI (2) No. 40 (1949-50), comments on community indifference curves from the standpoint of welfare economics.

[8] Paul Samuelson, "Welfare Economics and International Trade," *Am. Econ. Rev.*, Vol. 28, No. 2 (June, 1938), pp. 261-66.

[9] In the theory of bilateral monopoly as developed by Edgeworth and others, the indifference maps of two trading units are superimposed as in the accompanying diagram. The contract curve CC is the locus of tangencies of the two families of indifference curves. Of two bilateral monopolists, each would posit an indifference curve for the other and then move to the point of tangency between it and one of its own indifference curves. The final position on the contract curve would depend upon the relative bargaining strengths of the partners.



advantage of the other not to so behave, but rather to take account monopolistically of its own effect on price . . . and move the other along its offer curve up to a point of tangency of that locus with the monopolist's indifference curve."

Kaldor[10] showed this behavior diagrammatically, somewhat as in Diagram III which I have designed in order to show how the contemporary methodology has grown out of Marshall's work. He has G (France in his illustration) impose a general tariff, shifting OG to OG′ and the point of trade equilibrium from P to P′. P′ is a preferred position on OE for G because it is to the right of P″, where the G

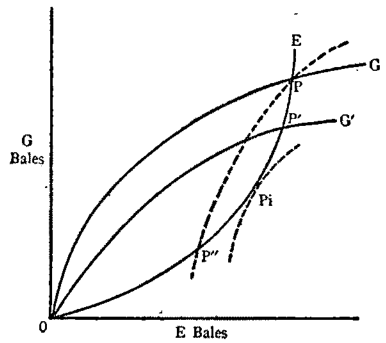


DIAGRAM III

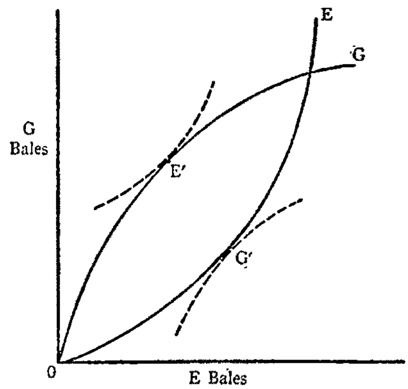


DIAGRAM V

indifference curve through P intersects OE. He also shows that the optimum duty for G would distort OG so that it would intersect OE at pi, where OE is tangent to the highest possible G indifference curve. A higher tariff, distorting OG to intersect OE below pi would result in less gain, and in actual loss if the new intersection is to the left of P″. Hence Kaldor calls pi the "optimum monopoly position"[11] and the price of wine (France's representative export in his illustration—a G bale in Diagram III) is the one which would rule if a single monopolist exported it. He observes that the introduction of import duties can produce "exactly the same effects as the introduction of monopoly," and goes on to remark that "retaliation will improve the position of the exploited country, but it might leave both countries worse off than they were originally."

Scitovsky's contribution[12] logically follows upon Kaldor's two con-

[10] N. Kaldor, "A Note on Tariffs and the Terms of Trade," *Economica,* Vol. 7 (Nov., 1940), pp. 377-80.

[11] Note that G increases its *gain* from trade even though its *volume* of trade is less.

[12] Tibor Scitovsky, "A Reconsideration of the Theory of Tariffs," *Rev. Econ. Stud.,* Vol. 9 (Summer, 1942), pp. 89-110.

clusions, for he portrays the behavior of a monopolistic entrepreneur on a diagram similar to Diagram III and also shows diagrammatically the effects of retaliation and counter-retaliation. He points out that the opportunity to move P to its "optimum" position (E′ or G′ in Diagram V) is not open to both countries simultaneously and, therefore, that there is a premium to be had for acting promptly. If one country does act and if each of them then proceeds to retaliate against the other, the volume of trade will steadily diminish as the two curves shift nearer to each other, but at each step the tariff-enacting country moves to a better position than it would have been in if it had not fought back. As Scitovsky observes, a position of equilibrium will be reached where "the two tariff-ridden offer curves are both tangential, each to one of the other country's community indifference curves." Whether or not this position is reached before all trade stops depends upon the shapes and relative positions of the indifference curves. Scitovsky also brings out clearly how the technique of *bilateral* monopoly can be used to analyze foreign trade policies by countries which typically do not trade with only one partner. If it is supposed that any one country will not consider the danger of retaliation by *all other countries* to its own tariffs, one reciprocal demand curve (and its implied community indifference curves) may be taken to represent "the rest of the world" as seen from one country. Generalizing this procedure means that "the rest of the world" will in fact act monopolistically, so that on the diagrams it is as if only two countries were being considered.

That this new equilibrium position, even if some trade continues, is very likely to be one of less satisfaction for "each country" taken singly than it enjoyed at P (before they started) is shown by Hirschman.[13]

Despite this fairly recent accumulation of a significant body of theory, there has been no systematic attempt to relate it to its antecedents in Marshall and Edgeworth, to examine its methodological limitations, and to contrast it with the traditional analysis of international trade by English-speaking economists.[14]

[13] Albert O. Hirschman, *National Power and the Structure of Foreign Trade* (Berkeley and Los Angeles, University of California Press, 1945), pp. 44-45.

[14] Moreover, there is not unanimity among the profession that the methodology described above is the most satisfactory way to approach the problem of how one country might reap monopoly gains from its international trade. Lerner ignores this body of thought in addressing himself to the question, and his treatment suffers as a result. (*Vid. The Economics of Control* [New York, Macmillan, 1944], Chaps. 27 and 29.) He proposes that a country should follow monopolistic principles in the various markets for its exports and monopsonistic principles in the various markets for its imports. By neglecting the principle of reciprocal demand he seems to suppose that, for example, the elasticity of the foreign

IV. *The Terms of Trade and the Volume of Trade*

We are now in a position to appraise Edgeworth's use of his pioneer diagram (Diagram II above). He sought to decide whether England would be benefited by distorting its offer curve to the left along OG by means of a tariff. He decided that if Q, the assumed new position of equilibrium after the tariff, is above M and inside the trade indifference curve, the inhabitants of England would be benefited by the tariff because their terms of trade would be better. In the light of contemporary use of this methodology, his analytical conclusion appears curious because, in the first place, it is apparent that England's terms of trade are better than at P at all points on OG between O and P, and the fact that the indifference curve cuts OMQP at M has nothing to do with this. In the second place, it is apparent that OG would intersect higher E indifference curves at *all* points between M and P, but that MQP is tangent to *only one* E indifference curve. In other words, as the indifference curve is drawn, it shows that improved *terms of trade* more than compensate E for the shrinking volume of trade along OG from P to M, but fail to do so between M and O.[15]

Marshall also sought to decide whether a country could gain by enacting a tariff to distort its offer curve. He concluded that a country would clearly gain if it faced a reciprocal demand of less than unit elasticity but would probably *not* gain if it faced a reciprocal demand of greater than unit elasticity.[16] The reason for this position was, of course, that if the foreign reciprocal demand is inelastic, a tariff-distorted offer curve will increase both imports and the home supply of exportable goods, while if its elasticity is greater than unity, the home

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supply of every good is quite independent of the amount of a given country's own exports which are offered in exchange. For a similar approach see Stephen Enke, "The Monopsony Case for Tariffs," *Quart. Jour. Econ.*, Vol. LVIII (Feb., 1944), pp. 229-45.

[15] Viner, in commenting on Edgeworth's exercise, fell into the same pitfall that Edgeworth did—*i.e.*, failed to recognize that the indifference curves must take account of both the terms and volume of trade in so far as each affects welfare. (Viner, *op. cit.* p. 582). Benham also fails to take into account this characteristic of the methodology (F. Benham, "The Terms of Trade," *Economica*, Vol. VII [Nov., 1940], p. 360-76).

Apparently it was Edgeworth's personal opinion that his graphical exercise should not be taken too seriously, for he promptly sought to minimize the implications of his conclusion for policy. In commenting upon his own analysis, he quoted with approval a remark by J. S. Nicholson that some analytical demonstrations are "part of the casuistry of economics, like the discussions of moral philosophers concerning the occasional justification of mendacity. Free trade, like honesty, still remains the best policy."

[16] Marshall did not think this terms of trade argument for tariffs was of much importance as a practical matter. His position rested in part upon his opinion that, "no country is likely to be able to throw any considerable part of the burden of her import duties on others: unless, either all her exports consist of things of which she has at least a partial monopoly; or she is the only important consumer of most of the commodities which she imports from those countries" (*op. cit.*, p. 198).

supply of exportable goods will increase but imports will decrease. In this latter case, the *volume* of trade declines, although the *terms* of trade improve; and without a single index of the effect of *both* on welfare, Marshall and his contemporaries believed that the advantage did not lie with restrictive practices.

V. *Restriction of the "Output" of Exports*

Until the appearance of the body of ideas summarized above, the Marshallian curves of reciprocal demand were not used for the analysis of problems in the field of international trade. Rather, they were regarded as providing an interesting graphical method of representing equilibrium in trade across national boundaries and were seldom used

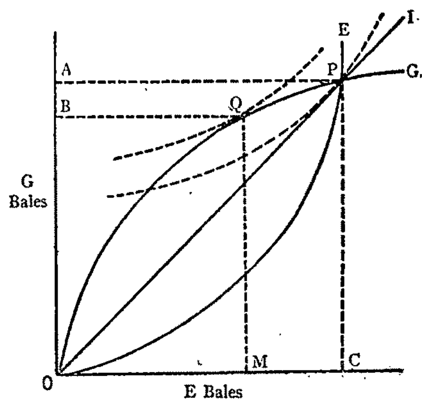

DIAGRAM IV

at all except, perhaps, for intellectual exercise by economists. Those who have revived the method now reject Marshall's view that a country could probably not gain from a tariff if it faced a reciprocal demand with greater than unit elasticity. Instead, they claim that a tariff will confer a nationalistic advantage if the country faces a reciprocal demand of anything less than *infinite* elasticity. A tariff decreases the (tariff-enacting) country's demand for imports in the schedule sense, and when this is portrayed on Marshall's curves, it also amounts to a reduction in the supply schedule of exports. The content and significance of the body of thought under review can perhaps be clarified if it is provisionally accepted for a graphical demonstration of this case.

The proposition that a zero tariff is the optimum monopolistic policy if a country faces a reciprocal demand for its exports of infinite elasticity could be demonstrated as in Diagram IV. Here OI is a "foreign" reciprocal demand curve of infinite elasticity, and OE is the

home country's reciprocal demand curve. If the home country follows a free trade policy (*i.e.*, does not distort its offer curve), equilibrium would be at P. As explained above, it follows from the derivation of OE that one of E's community indifference curves must be tangent to OI at P. Therefore, P is the optimum position on OI for E and free trade is indeed the rational policy for E. It would continue to be so even if G should levy a tariff shifting the position of OI, as long as OI remains a straight line, or in other words, as long as the country faces constant terms of trade.

To assume that a single country will not consider the collective retaliation of other countries to its own tariff policies (a necessary assumption for this methodology, as pointed out above) implies that the country supplies exports to a world market in which it believes the demand (in the schedule sense) for its exports will not change as a result of its own policies. It is conventional, among those who use international reciprocal demand curves, to suppose that countries face a "curvilinear" reciprocal demand, which is to say that they realize different terms of trade for different "outputs" of exports. (Otherwise, they would face a demand of infinite elasticity and the optimum tariff would always be zero.) For a given country, this possession of a certain amount of control over its market may, of course, arise either from some degree of monopoly in its export markets or some degree of monopsony in its import markets, or both. The presence of some degree of market control in this sense is usually alluded to by stating that the given country's "strategic position" (economically) is taken as a datum. Therefore, in a single diagram, one may show the difference in the rational behavior of a country if, on the one hand, it believes that it faces an infinitely elastic reciprocal demand, and, on the other hand, it believes that the world's reciprocal demand for its exports is of less than infinite elasticity. Such a contrast is analytically similar to the Chamberlinian case of a single monopolistic firm contrasted with a competitive firm.

If the reciprocal demand for E's exports is of infinite elasticity, OI in Diagram IV, E will be in free trade equilibrium at P supplying OC of E bales in exchange for OA of G bales. Free trade is, of course, the optimum policy for E. If, however, we suppose that E does have some control over the price of its exports and faces a curvilinear reciprocal demand curve, it will restrict trade. OG, the curve of less than infinite elasticity, must begin at O and pass through P. E's equilibrium position now shifts to Q, where it supplies (fewer) OM exports in exchange for (fewer) OB imports. Because OG is curvilinear and convex to the G bale axis, and must pass through both O and P, it follows that it must be tangent to an indifference curve at a volume of E bales less

than OC, and it would be rational for E to distort the reciprocal demand curve (OE) by a tariff so that it would intersect OG at Q. Thus we find that if a country were in a situation in which it believed that different terms of trade would be associated with different volumes of exports, it would rationally supply fewer exports and receive fewer imports than it would if it faced given and constant terms of trade (an infinitely elastic foreign reciprocal demand).

VI. *Radical Implications of the Methodology*

Thus far a sketch has been provided of the interesting manipulations which appear to have been made possible by theoretical refinement of basic tools worked out by Marshall and Edgeworth. In section VII below, reasons are advanced for finding the use of community indifference curves unsatisfactory, but very eminent members of the profession have subscribed—either explicitly or implicitly—to their use and, as will be pointed out in this section, without apparently recognizing all of the implications of doing so.[17] Broadly speaking, the methodology under discussion comes very close to providing us with a consistent formal theory of an important aspect of economic nationalism, and in a world which has been tormented by various forms of this virus since, say 1920, it would be a highly significant achievement if economists could provide an acceptable formal theory of the phenomenon. Therefore, this section has been added to indicate the great importance that would attach to the ideas under review—if one did not feel compelled to add a final section rejecting the methodology.[18]

A. *The Selection of Premises*

At the hands of English-speaking economists, the development of the formal theory of international trade has been largely "atomistic" and cosmopolitan in character because the premises used have been applicable to economic relations among private buyers and sellers who happen to live in different countries but conduct trade across national boundaries. More specifically, if still in terms of broad generality, it has usually been supposed that: (1) The relevant decisions in international trade are made by many, private, profit-maximizing business units and many, unorganized, income-maximizing consumers; (2) The

[17] H. Denis, in "A Note on the Theory of Tariffs," *Rev. Econ. Stud.*, Vol. XII (2), No. 32 (1944-45), cites the body of doctrine under review here as constituting "important progress in the pure theory of international trade" without remarking upon the sharp break with precedent in the English-speaking world which these doctrines involve.

[18] It is clear from what has gone before that all economists do not find it necessary to reject community indifference curves. For a rather typical attitude toward this problem which does not quite finally reject them, see G. Haberler, "Some Problems in the Pure Theory of International Trade," *Econ. Jour.*, Vol. LX, No. 238 (June, 1950), pp. 223-40.

relevant decisions tend to be made in terms of price and cost relationships; (3) The balance of payments of a country is a registering device rather than a guide to active policies that may themselves be systematically expounded; (4) The rôle of government is typically restricted to management of the currency.[19] Thus atomistic forces have been stressed, and have tended to lead an existence independent of any considerations of a national economic interest which might inhere in the fact of national sovereignty. Ricardo's famous remark that "Every transaction in [international] commerce is an independent transaction,"[20] illustrates this characteristic of our subject.

It is against this background that the essential novelty of the ideas here under discussion appears, for they *sectionalize* the world economy into independent national economies by assuming the existence of two separate community preference systems. Such a sharp separation of distinctly national economic interests, and the *formulation of a formal theory of active national tariff behavior* would have appeared quite novel to the British classical economists. It might not have appeared theoretically "revolutionary," however, for while the British classical (and neo-classical) writers developed a cosmopolitan and "atomistic" *formal theory* of international trade, they were quite conscious of a national economic interest when they turned to the subject of economic policy.[21]

The relatively cosmopolitan character of the British classical theory of international trade is immediately apparent when List, for example, is considered. Historians of economic ideas find List difficult to "classify," and I think one reason is that his perception of the State as an economic unit capable of *economizing* in the national interest was very clear-cut. The premises for his historico-theoretical analysis were more inclusive than, say Ricardo's. He was very much aware that the environment of his day had *two* interesting characteristics: (1) National states existed which were the ultimate sources of power and authority; (2) International trade and investment were briskly growing, rendering various parts of the world more interdependent eco-

[19] It is true that writers on international economic *policy* have customarily gone farther than these assumptions would permit, but they usually proceed to appraise governmental policies in terms of a competitive international equilibrium, the very existence of which depends upon the empirical assumptions listed in the text. *Vid.* A. P. Lerner, *op. cit.,* Chaps. 27-29 for a conspicuous exception to assumptions (1), (3) and (4).

[20] David Ricardo, *The Principles of Political Economy and Taxation* (London, J. M. Dent and Sons, Ltd.; New York, E. P. Dutton and Co., 1911, Everyman Ed.), p. 85.

[21] Students of the history of economic thought will think of many citations, from Smith onwards, in support of this statement. The distinction beween theory and policy is perhaps not so sharp as might first appear, however. For example, Mill's discussion of both the "infant industry" and the "terms of trade" arguments for tariffs suggests a certain ambiguity about his theoretical concept of a national economic interest.

nomically, and incidentally building up criss-crossing commercial ties that seemed not to be seriously thwarted by national frontiers.[22]

This is not the place to develop possible explanations of why the theory of international trade took a cosmopolitan, "atomistic" turn at the hands of the British classical economists.[23] It must suffice to point out that it *did*, and that the ideas being considered here represent a sharp break with this tradition. How sharp a break is indicated by Diagram IV. This diagram and the analysis it represents make no sense unless we postulate the existence of some kind of national economic policy agent trying to *decide* whether or not "it" faces a reciprocal demand that is less than infinitely elastic. If "it" decides that it does, its conduct is adjusted accordingly and we have a limitation to output (exports) arising on the *demand* side of the market which has the same economic effect as a negatively inclined demand curve facing a firm in ordinary partial equilibrium analysis.

A careful study of the relationship between the idea of a (collective) national economic interest and the formal theory of international trade developed by the British classical economists would be highly rewarding.[24] Pending such an investigation, it appears that their thinking was somewhat ambiguous at this point but that, in the environment of nineteenth century England, such ambiguity did not have serious consequences. The essential nature of the ambiguity is indicated in a remark of Hume's which symbolizes quite well the transition from mercantilism to economic liberalism. Observing that one country need not fear the prosperity of others because they could be good customers only if they were prosperous, he said: "I shall therefore venture to acknowledge that, not only as a man, but as a British subject, I pray for the flourishing commerce of Germany, Spain, Italy, and even France itself."[25] The cosmopolitan tradition of the British classical school, I

[22] It is significant in this connection that he strongly dissented from the British classical view—found in Smith, Ricardo and Mill—that free international trade would promote international amicability. On the contrary, he thought that self-respecting sovereign states other than Britain would not tolerate the "aimless" intrusion of atomistic business forces into their domains if they did not promote economic development. International peace and free trade, he claimed, must follow, and not precede, the development of Germany to a position of economic equality with Britain.

[23] The two principal reasons are, I think: (1) Economic theory appeals to rational minds and free trade appeared to be the most rational national economic policy. Therefore, if rational public policies were to be pursued—and most of our forebears in economic theory thought they would be—free trade hypotheses were the most useful ones; (2) Being Englishmen in an Anglo-centric world, the national economic interest of their country did not appear to them as something that needed promotion by theories and policies of economic nationalism.

[24] As eminently practical citizens, of course, they thought and wrote about the national economic interest, but it almost eludes detection in their strictly theoretical work.

[25] From *Of the Jealousy of Trade,* quoted by Alexander Gray in *The Development of Economic Doctrine* (New York, Longmans, Green, 1931), p. 121.

think, rested essentially upon the intellectual feat which enabled Hume to achieve this harmony between his prayers "as a man" and "as a British subject." Such a harmony would become quite cloudy if one should suppose that British subjects had some unique collective economic interest in common, and it would disappear if they were to set about pursuing such an interest at the expense of people in other countries. By selecting "atomistic" premises for their formal analysis of international trade, the great majority of British writers after Hume built up an essentially cosmopolitan theory of the subject.[26]

B. *Analytical Conclusions*

If one recalls that the classical and neo-classical economists ordinarily drew the conclusion from their analyses that free trade was the most *rational* economic policy for a single country (regardless of what policies other countries might follow), it is immediately apparent that the economists here under discussion have in this respect, too, made a very sharp break with the precedent set by the majority of English-speaking writers on the subject.[27] Not only do they identify a range of points on the offer curve facing a country which are superior to the point of free trade equilibrium, but, in a world in which economic nationalism is fashionable (however deplored) it would clearly be to a country's interest to enact tariffs promptly, if possible before its neighbors do. Scitovsky's conclusion on this point is unequivocal: "To call the raising of tariffs on these assumptions irrational, would be similar to calling competitive behavior irrational."

Moreover, a little further reflection upon the probable shapes of reciprocal demand curves applicable to "important" and "unimportant" countries would lead to the disquieting analytical conclusion that the economic opportunity to exploit foreigners would be more attractive to a large and important country than to a small and unimportant one.[28] Also, retaliation by others against the tariff policy of an "important" country is more likely than retaliation against an "unimportant" country, so that a strong economic incentive to exploit other countries

[26] An illustration of theoretical harmony is provided by the fact that the classical and neo-classical models postulated buyer-seller relationships "between countries" whose nationals *exchanged* goods. There was no theoretical model, for example, of countries in a seller-seller relationship vis-à-vis each other in third markets.

[27] An exception to free trade was thought defensible in theory, however dubious in practice, in favor of the "infant industry" argument.

[28] In practice, much might depend upon the commodity composition of trade. That is, a "small" country might have a monopoly in supplying one or a few "vital" commodities. Aside from this special case, however, a large and important country would probably be less dependent on international trade than a small country and would therefore *have* a relatively elastic demand for imports and a relatively elastic supply of exports. It is also probable that "the rest of the world" would be more dependent upon trade with a large and important country than upon trade with any particular small country, so that a large country would *face* a less elastic reciprocal demand.

and a strong likelihood of retaliation probably occur together in practice.

The conclusion to which this analysis points is clear and unmistakable (still not attacking the concept of community indifference curves) and has been frankly stated by Scitovsky and others. It is that national economic sovereignty is incompatible with a stable world system of free trade. More than this even, the analysis would lead inexorably to the conclusion that a world-trading system of economically sovereign countries would be very likely to degenerate quickly into a conflict of special (national) interests and that consumers' welfare in all countries would deteriorate as the self-defeating struggle progressed.[29]

It should be clear that, like certain other socially unsettling conclusions that have been drawn by economists, this one would have definite roots in Ricardo. At the end of his classic illustration of the law of comparative costs, he concluded that, "It would undoubtedly be advantageous . . . to the consumers in both countries" if there were no obstructions to the movement of capital and labor across national boundaries.[30] The doctrines we are discussing would go one step further in effect and show that by breathing life into the national state, as it were, and portraying it as a rationally calculating economic unit, not only would consumers not have as large a social product as they would have if there were no (passive) national boundaries, but they would suffer a contraction in their total welfare. The probability that this would occur, *given one's acceptance of the community indifference curve methodology* and the reality of an ungoverned world, is very high since no national government which could see such a clear opportunity of immediate gain would be likely to refrain from taking advantage of it.

C. *Policy Implications*

In one important respect the "new methodology" would lead to a conclusion that has long been familiar to English-speaking students of

[29] One obvious criticism of the methodology under review is that it is "too neat" to apply to so unsystematic a process as the formulation of tariff policy. If one could accept the concept of reliable curves of reciprocal demand and community indifference, certainly the former could not be expected to remain symmetrical and smooth in a world of economic bellicosity. As Diagram V brings out, such curves would make a country admirably vulnerable to exploitation by other countries, since E′ and G′ respectively show the alternative optimum monopoly positions available to E and G, depending upon which moves more promptly. It seems improbable that an economic control agency of a country would leave itself so exposed. If G should enact (or propose to enact) a tariff and move its offer curve toward G′, E might threaten an embargo on trade with G or, at least refuse G access to E goods for which G's demand is most inelastic. If governments should thus seize monopoly power over the export (or import) of certain economically strategic goods, such discontinuities would appear in the reciprocal demand curves that they would become quite unmanageable.

[30] *Op. cit.*, p. 83.

international trade. It is that world-wide policies of free trade are probably "best" for all of the world's consumers taken together. Placed in the context of this judgment, the analytical finding that a world-wide system of free trade would probably be economically unstable leads Scitovsky to the conclusion for public policy that "some form of compulsion is necessary to ensure free trade." According to the usual understanding of a free trade world, the bulk of international trade and investment would be carried on by private enterprises which should be able to make plans on the assumption that the international economic policies of governments will aim at relative *stability*. The incompatibility between such a world of private international transactions and the world of embattled national states suggested by the model certainly implies that without some form of compulsion administered in the interest of *all* the world's consumers, international trade and investment would appear chronically unattractive to private enterprises.

This is the policy implication of the "new methodology" which I think is most interesting. Certainly in a world struggling toward new and more inclusive political forms, the type of analytical demonstration which those who use community indifference curves purport to make would be of considerable practical significance. Therefore, if I found the methodology acceptable, I could not agree that the characterization of it which appears in the introduction to *Readings in the Theory of International Trade* brings out its most significant aspect. There it is said that, "It is surprising . . . to find that the improvements in international price theory, when they were finally made . . . affected the basic conclusions derived from the classical theory only to a moderate extent. On questions of commercial policy, for example, Mill and Scitovsky are in substantial agreement, even though their methods of analysis and their underlying price theories are considerably different."[31] Surely it cannot be forgotten that Mill made only vague and obscure references to the existence of a national economic interest and to the policies of "collective churlishness" which might be followed (mistakenly, he thought) to promote it. On the other hand, so far from supposing that countries will rationally adhere to free trade (Mill's—and Edgeworth's—recommendation for commercial policy), Scitovsky claims to show an incentive which exists for each country to be the *first* to exploit other countries. His conclusion is unmistakable that,

[31] Howard S. Ellis, and Lloyd A., Metzler, in the Introduction to *Readings in the Theory of International Trade* (Philadelphia, Blakiston, 1949). It is curious to find in this "Introduction" the quoted reference to the use of community indifference curves as "finally" bringing "improvements in international price theory," and three pages later an expression of doubt as to whether or not the methodology is valid at all. On page xi we read that "the concept of a collective indifference schedule for the community as a whole . . . has frequently been called into question. But whether this affects the validity of their final conclusions [Leontief's and Scitovsky's] is a question which need not detain us here."

given economic sovereignty, we should not expect world-wide free trade to flourish and (as Mill expected) to usher in an era of international good feeling. Surely Scitovsky's most interesting finding for commercial policy is that "some form of compulsion is necessary to ensure free trade."

VII. *Collapsing a Methodological House of Cards*

The close relationship between the contemporary ideas discussed above and the terms-of-trade argument for tariffs which was familiar to classical and neo-classical economists has been brought out. Taken together, Marshall's reciprocal demand curves and Edgeworth's addition of a single community indifference curve may be regarded as a midway house in the progress of thought from Mill to Scitovsky. The point has also been made that reciprocal demand curves were scarcely used in the theory of international trade until their recent revival by Samuelson, Kaldor, Scitovsky and others. One reason for this hiatus in their use is that economists had little or no confidence in the practicability of the terms of trade argument for tariffs with which the curves were associated. Marshall's opinion was cited in note 16 above.[32] Haberler expressed his dissatisfaction with the argument in strong terms by writing that, "It is out of the question to deduce an argument for tariffs [on this basis]. . . . Whoever does so proves only that he has not realized the full complexity of the problem."[33] A second reason why Marshall's curves were allowed to lie fallow for so long is that the very completeness and the finality of the picture of equilibrium which they provide (and its representation in terms of real resource units) was generally thought to make them unsatisfactory tools of analysis. Edgeworth once made this point by comparing them to the hands of a clock, which move as the result of a complicated but hidden mechanism. Haberler made the same point by observing:

> One can make a rough estimate of the money demand for some particular good, but it is almost impossible to estimate the elasticity of the Marshallian demand curve of a country. Guessing the shape of these curves and then reading off the result means simply jumping to the final outcome of a complicated process without analyzing it. By assuming Marshall's curves as given we really assume the result.[34]

We now know that the major reason for dissatisfaction with the terms-of-trade argument for tariffs (and, by implication, with the prac-

[32] The terms of trade *argument* for tariffs has long been recognized, however, as being one of the few arguments for tariffs which might have theoretical respectability. *Cf.* Viner, *op. cit.*, pp. 298-99, 320, 322, 447.

[33] *Op. cit.* note 4 above, pp. 294-95.

[34] *Ibid*, p. 159.

ticability of Marshall's curves) was the non-comparability between gains which might accrue from improved *terms* of trade and losses which would follow upon a reduction in the *volume* of trade. We now know, too, that contemporary writers believe that, by showing community indifference curves (in terms of "bale units") to be implicit in Marshall's reciprocal demand curves, they have succeeded in making this community gain and this community loss comparable. To adopt Edgeworth's metaphor, the writers under review confidently set and reset the hands of the clock in order to move them toward *points of partial equilibria* for particular countries.[35] These countries are assumed to be actively economizing agents under unified management, and bent upon ruthless (if short-sighted) economic aggrandizement. After carefully weighing the probable elasticity of the relevant reciprocal demands, they are presumed to enact tariffs because (in the short run) it can be demonstrated that they will increase the community's welfare.[36]

The preceding paragraph brings out sharply the crucial rôle of the concept of reliable community indifference curves in the "new methodology." In short, they must make it possible to arrive at policy decisions in the field of international trade, and this they cannot do. The reasons why they cannot may be analyzed under two general headings.

A. *Tariffs Change the Distribution of Income*[37]

A community indifference curve, in the first place, is a locus of points representing a constant real income for the community as a whole. Each curve represents a unique income distribution within the community, and the various points on the curve show different combinations of the goods measured on the two axes. Therefore, through any point on a community indifference map there pass an almost infinite number of indifference curves, corresponding to every possible *distribution* of the combination of goods represented at that point. This means that if a country should (in effect) distort its offer curve by means of a tariff, which implies some redistribution of incomes within the country, the new system of indifference curves would have a shape

[35] It should be noted that such points of partial equilibria are not conceivable under the methodology of the British classical school. Marshall and Edgeworth only hinted at them.

[36] It is indicative of the confidence which they feel in their achievement of making comparable two economic concepts previously thought incomparable that the contemporary writers under review state their conclusions in the indicative mode, whereas the classical and neo-classical economists usually use the conditional when reaching conclusions in this field.

[37] For a good statement of some of the problems involved in inter-personal comparisons of utility (a process implicit in the use of community indifference curves) see W. J. Baumol, "Community Indifference," *Rev. Econ. Stud.*, Vol. XIV (1), No. 35 (1946-47), pp. 44-48.

different from those applicable before the tariff. Therefore, the two pertinent indifference curves would have a shape different from the ("same") two applicable before the tariff. Moreover, in Diagram IV the "pre-tariff" curve tangent to P and the "post-tariff" curve tangent to Q might intersect.

Scitovsky makes the most forthright attempt to deal with this problem, and he seeks to render it manageable by explicitly confining his attention to only two of many possible hypothetical income distributions—the ones prevailing before and after the contemplated tariff.[38] He then proceeds to argue that if these two income distributions are "similar," it is unlikely that the relevant community indifference curves will intersect, and therefore the community's total welfare in the two situations will probably be comparable.[39] This courageous attempt to rescue the methodology is unsatisfactory for at least two reasons. First, a decision is called for—whether or not to enact a tariff— and the basis upon which it must be made cannot be established until *after* the tariff has been passed and *allowed to have its effect upon income distribution so that a new family of indifference curves can be drawn* appropriate to the new distribution pattern. Secondly, a comparison "before and after" is possible only if the two income distributions are "similar," and they would become "dissimilar" long before the spectacle of retaliation and counter-retaliation envisaged by Scitovsky could go very far. As soon as enough dissimilarity occurs (and this crucial criterion of "similarity" is probably not possible to define), the "before and after" families of indifference curves will intersect, suggesting not one optimum tariff but a whole range of optima.

B. *Too Many Variable Are in the Premises*

It is now quite apparent that there is a striking contrast between the quite vague and tenuous nature of the concept of reliable community indifference curves, on the one hand, and the definite and forcefully stated conclusions which those who use them claim to reach. We have not far to seek for an explanation of the contrast: it is that the greater apparent certainty of the "findings" made with the use of community indifference curves is paid for by using assumptions which must be both very numerous and extremely restrictive. In other words, use of the new tools described above does not, in actual fact, enable one to side-step any of the old problems that have worried economists

[38] Note 12 above.

[39] Scitovsky appears to have certain reservations about this "solution" for at the end of the sections in which it is presented he writes, "Readers who feel uneasy about what has been said so far are *well advised* at this stage to forget about [it] altogether" (*ibid.*, italics supplied).

since Ricardo who have labored in this field of inquiry. A country's relative degree of monopoly in particular (potential, as well as actual) export markets, of monopsony in particular (potential and actual) import markets, the equivocal nature of various measures of changes in the terms of trade, the vexing problem of deciding whether "a country" is or is not "better off" if it secures fewer imports on better terms,[40] the baffling problem of the effect of changes in income distribution upon community welfare—all of these problems still exist in the real world, but are covered by theoretical premises in the "new methodology."

Thus—and now we have arrived at the heart of the matter—the difficulty of drawing the community indifference curves and the Marshallian curves (both in terms of "bales of resource embodiments") according to the current fashion merely replaces the difficulty which classical and neo-classical economists faced when they tried to make hard practical judgments *one at a time*. It seems, indeed, as if Haberler in 1936 were smiling in the background, remarking that "guessing the shape of these curves and then reading off the result means simply jumping to the final outcome of a complicated process without analyzing it."[41] It would be fatuous of course to suppose that the neatly *symmetrical* preference systems of the diagrams were applicable in the real world. In short, it seems that those who use community indifference curves and Marshall's reciprocal demand curves have been led to formulate sweeping and positive conclusions which their underlying methodology cannot support.[42]

[40] Neo-classical writers, while they did not make much use of community indifference curves, did point to an aspect of this part of the problem which is not brought out by the contemporary writers. In Diagram III the vertical distances between OG and OG′ represent the tariff revenue of G's government in terms of G bales. Clearly the underlying indifference curves which would validate OG would not be changed (in the short run, at least) by the imposition of a tariff. That is to say, in the short run, cost conditions in G's export industries and the utility functions in G for G's imports do not change. Hence it follows that G's producers and consumers—as such—are injured by the tariff: the price of imports (in their own currency) immediately rises and the market for exports contracts. As a unit, however, G country is supposedly better off, as shown by the diagram. This is so because the government's tariff revenue is reckoned along with the effects on private producers and consumers. Therefore, we must know how G's government responds to the increase in its revenue in order to assert unequivocally that "G" would be better off at P′ than at P.

[41] *Cf.* note 34 above.

[42] Were Marshall still among us, he might not be surprised at the revival of his ingenious curves of reciprocal demand and their portrayal against a background of super-imposed community indifference curves. He certainly would be surprised, however, at the easy transition from this exercise to the statement, on the basis of it, of firm conclusions about the world of affairs. He, too, enjoyed the logical intricacies of pure theory, but wrote in justification of an extensive treatment of reciprocal demand curves with "exceptional elasticities" that such explorations "derive their origin from the sport of the imagination rather than from the observation of facts." *Op. cit.*, p. 353.

POSTWAR WAGE DETERMINATION IN THE BASIC STEEL INDUSTRY

By ALBERT REES*

Wage increases won by national unions in basic industries have often been called a primary cause of the postwar inflation. The following statement by Admiral Ben Moreell, president of the Jones and Laughlin Steel Corporation, typifies this view:

> Raises in one strategic industry have been followed by similar raises in another, and then by equivalent raises "across the board." Our price level has been on an upward spiral dictated in large measure by labor leaders.[1]

At this writing, a renewed inflation seems well under way, and inquiry into the rôle of large-scale collective bargaining as a possible cause of inflation again assumes great practical importance. If collective bargaining is indeed a basic cause of inflation, it should be regulated in the public interest. If it is not a cause of inflation, or is only a minor contributing cause, then other means of controlling inflation must be found, and regulation of collective bargaining must be justified, if at all, on other grounds.

The first questions to be answered in such an inquiry are: Has large-scale collective bargaining during the postwar period raised wages above the levels which would have prevailed in its absence? If so, to what extent?

I have sought to answer these questions for the basic steel[2] industry for the period 1945-48. Basic steel is a large industry producing an

* The author is assistant professor of economics and research associate of the Industrial Relations Center, University of Chicago. This article is based on research financed by a grant from the Rockefeller Foundation. Professor Frederick H. Harbison has read the manuscript and made valuable suggestions. Supporting data for many of the points made here can be found in a doctoral dissertation in the library of the University of Chicago.

[1] U. S. Congress, Senate, *Economic Power of Labor Organizations*, Hearings before the Committee on Banking and Currency, 81st. Cong., 1st Sess., Aug. 9 to 26, 1949 (Washington, 1949), Part 2, p. 715.

[2] The basic steel industry as defined here consists of blast furnaces, steel works, and rolling mills. However, in the discussion of profits, data exclude the basic steel operations of firms whose operations are primarily in other industries, (*e.g.*, the Ford Motor Company), and the operations of merchant blast furnaces and non-integrated rolling mills. These are blast furnaces and rolling mills operated by firms which do not operate steel works.

essential product, and one where collective bargaining is frequently cited as a cause of inflationary pressure. It employed an average of 470,785 production and related workers in 1947.[3] All but a small number of these workers are represented by the United Steelworkers of America, CIO, the second largest union in the country. The total membership of the United Steelworkers in 1948, including members outside the basic steel industry, was 929,000.[4]

Although a study of the basic steel industry proves little about the effect of collective bargaining on wages throughout the economy, conclusions based on basic steel are probably reasonably valid for a larger group of manufacturing industries which bargained largely with CIO unions. This group includes the automobile, flat glass, rubber, and electrical manufacturing industries, as well as other industries such as steel fabricating and aluminum which bargained in part with the United Steelworkers.

I. *The Events of Collective Bargaining*

The events of collective bargaining in basic steel from 1945 to 1948 fall into what have generally been called the first three "rounds" of postwar wage increases. Each of these rounds terminated with the negotiation of a new wage agreement. Bargaining in the industry takes place between the United Steelworkers and individual steel producers, but in each of the first three rounds, the settlement with the United States Steel Corporation was closely followed by the other major producers.

The first round took place under government wage and price control, and became in effect a tripartite affair in which union-company bargaining on wage increases and company-government bargaining on price increases were inextricably intermingled. The breakdown of these triangular negotiations resulted in an industry-wide strike on January 21, 1946. At this time the union was demanding a wage increase of 18½ cents an hour, and United States Steel was offering 15 cents. The strike was settled on February 15 with an 18½ cent wage increase, which followed the modification of government wage-price policy to permit an immediate $5.00 a ton increase in steel prices.

During the following summer and fall the sharp rise in consumer prices paved the way for new wage demands. Following similar wage increases in other mass production industries, United States Steel and the union signed an agreement in April, 1947 which included a second-

[3] U. S. Bureau of the Census, *Census of Manufactures, 1947, Blast Furnace, Steel Mill, and Iron and Steel Foundry Products*, MC33A (Washington, 1949), p. 4.

[4] U. S. Bureau of Labor Statistics, *Directory of Labor Unions in the United States*, Bull. No. 937 (Washington, 1948), p. 45.

round "package" of wage increases and other economic benefits whose total value was estimated to be slightly over 15 cents an hour. The agreement ran for two years, with a wage reopening possible after one year. However, the agreement did not permit the union to strike in connection with the wage reopening.

In April, 1948 the union sought a third-round wage increase under this reopening clause. United States Steel rejected the wage demands, and at the same time made slight reductions in the prices of certain products. It stated that it took these actions in an attempt to halt

TABLE I.—MONEY AND REAL EARNINGS IN THE BASIC STEEL INDUSTRY, 1939–40 AND 1945–48*

Year	Average Hourly Earnings			Average Weekly Earnings	
	Current Dollars		1935–39 Dollars	Current Dollars	1935–39 Dollars
	Amount	Index (1939=100)			
1939	.845	100.0	.850	29.88	30.06
1940	.851	100.7	.849	31.49	31.43
1945	1.188	140.6	.925	52.44	40.84
1946	1.291	152.8	.927	48.25	34.64
1947	1.439	170.3	.904	55.95	35.14
1948	1.579	186.9	.922	62.40	36.45

* Based on data of the U. S. Bureau of Labor Statistics. Real earnings are based on the consumers' price index as published (not adjusted for wartime understatement).

inflation, and that if, despite them, costs continued to rise, it would reconsider wage and price increases at a later date. The union charged that the corporation had not negotiated in good faith and was disregarding the rise in the cost of living. However, the union abided by its no-strike agreement.

Unions in the coal, automobile, and electrical manufacturing industries negotiated wage increases during May and June of 1948. In late June, United States Steel reopened negotiations with the United Steelworkers, and on July 16 agreed to wage increases averaging 13 cents an hour. These increases were approximately equal to those given in the automobile and electrical manufacturing industries.

The effects of the first three rounds of wage increases on money and real earnings in the basic steel industry are shown in Table I.

II. *The Determinants of Wage Increases*

The main task of this article is to analyze the determinants of the wage increases which have been described. The separation of the causal

forces into different categories must be to some extent arbitrary, and each factor will represent not something added to the previous ones, but rather a new approach to the total situation. All the factors together can be considered as the determinants of the course of collective bargaining. Alternatively, the factors peculiar to collective bargaining can be omitted, and the remaining factors viewed as those which would have determined wages in a non-unionized situation.

Under full employment in the absence of unions, wages would be determined principally by the demand for and supply of labor. Changes in the cost of living might be a minor independent factor.

Under collective bargaining, the demand for and supply of labor are still major factors, but operate through the bargaining process. The cost of living becomes more important, and profits and output per man-hour become important as influences shaping union demands and management's response. A variety of new institutional factors become relevant to wage determination.

The increase in the industry's demand for labor is shown in part by employment data. The estimated employment of production and related workers rose from 458,000 in 1945 to 525,000 in 1948, despite the increases in wages indicated by Table I.[5] The sharp increase in the demand for steel also indicates a probable increase in the demand for steel labor. The rise in the demand for steel is shown in part by the following price and output data: In 1945 finished steel output was approximately 57,000,000 tons at an average base price of 2.4 cents a pound; in 1948 output had increased to almost 66,000,000 tons, despite an increase in the average base price to 3.4 cents a pound.[6]

These data greatly understate the increase in the demand for steel, since the industry priced its products very much below the levels which would have cleared the market. This policy resulted in an unsatisfied demand at the prices established by the producers. Under such circumstances, wage increases can be covered or more than covered by price increases without reducing the quantity which can be sold. They may even provide a welcome opportunity for price increases which would otherwise be explained on other grounds.

The unsatisfied demand for steel was indicated by the existence of a widespread grey market. During 1947 and 1948, sheet and strip steel with established prices of from $64 to $100 per ton sold at prices of from $200 to $400 a ton on the grey market. Grey-market transactions were also reported in nails, pipe, plate, and slabs.[7] Rather than buy on

[5] Source: U. S. Bureau of Labor Statistics.

[6] Output data are from the American Iron and Steel Institute; price data are from *Iron Age.*

[7] U. S. Congress, Senate, *Steel Supply and Distribution Problems Affecting Smaller Manufacturers and Users,* Hearings before the Special Committee to Study Problems of American Small Business, 80th Cong., 1st Sess. (Washington, 1947).

the grey market, some consumers purchased steel scrap, had it converted to ingots in electric furnaces, and then had the ingots rolled into finished steel. They paid for transportation between each step and paid charges for each service. The delivered cost of such "conversion" steel was often double to triple the established delivered price. Furthermore, between 1945 and 1948 at least five steel mills were purchased by steel-consuming firms to assure themselves of a source of supply. These mills were all small, and generally high cost or obsolete.

There is considerable evidence that the industry experienced a shortage of labor at current wage rates during the postwar period. Such a shortage would cause the bidding up of wages in the absence of collective bargaining, and an increased willingness on the part of employers to grant wage increases under collective bargaining. It is particularly significant that shortages existed soon after wage increases were negotiated, indicating that negotiated rates at these times were probably below those which would have prevailed in the absence of bargaining.

From July, 1946 to at least August, 1947, there were serious local shortages of steel labor in the Youngstown and Chicago-Gary areas.[8] In the last month of this period, The Youngstown Sheet and Tube Company, which operates in these two areas, reported that it was short 1,000 workers out of its normal steelmaking employment of roughly 24,000.[9] Steel producers also reported shortages of particular types of skilled labor, such as bricklayers. Further indication of the state of the labor market is provided by labor turnover data. When there is substantial unemployment, quit rates are low and layoff rates are high, while the reverse is true when labor is scarce. In April of 1940, the monthly quit rate per 100 employees in basic steel was 0.4 and the layoff rate was 1.9. In April of 1947 these rates were 2.6 and 0.1 respectively; a year later they were 2.1 and 0.2.

The increase in the cost of living was probably the most important cause of membership pressure on union leaders for wage increases. As shown in Table I, higher consumer prices nullified the effect on real hourly earnings of the money wage increases won by the United Steelworkers in the first three rounds. The highest real average hourly earnings achieved in the industry up to the end of 1948 were \$.991 (1935-39 dollars) in March, 1946, the month following the first round increase. A year later they had fallen to \$.853. Although real hourly earnings were raised by the second and third round wage increases, in December, 1948 they still fell short of the March, 1946 level by 2.5 cents. Management in the steel industry did not contest the principle that increased living costs were a proper basis for wage increases.

[8] Based on U. S. Employment Service, *Labor Market Information,* Industry Series No. 33-1, current supplements, (mimeographed), and *Iron Age.*

However, management sought to establish January, 1941 as a base date for cost-of-living comparisons, whereas the union in 1947 and 1948 used early 1946 as its base date. Using a January, 1941 base, about 77 per cent of the wage increase in the industry from January, 1941 to December, 1948 was justified on cost-of-living grounds.

TABLE II.—PRODUCTIVITY AND PROFITS IN THE BASIC STEEL INDUSTRY, 1939–40 AND 1945–48

Year	Output Per Man-Hour: Index, 1939=100[a]	Profits Before Taxes	
		Amount in Millions (20 companies)[b]	Per Ingot Ton (9 companies)[c]
1939	100	$162.4	$ 3.26
1940	103	360.3	5.71
1945	—[d]	270.6	3.61
1946	117	345.3	5.55
1947	128	655.7	8.28
1948	130	884.6	10.44

[a] Based on man-hours of wage earners and output of finished steel products as reported by the American Iron and Steel Institute. To reduce the effect of changes in the product mix, the output of each product has been weighted by its man-hour requirements per net ton in 1935. Man-hour requirements are from B. H. Topkis and H. O. Rogers, "Man-Hours of Labor per Unit of Output in Steel Manufacture," *Monthly Labor Review*, Vol. LX (May, 1935), pp. 1155–61. The weighting brings down the level of the index of output per man-hour in each year after 1939 except 1948, in which year the weighted and unweighted indexes are identical.

[b] Based on profits before taxes, before provisions for contingencies, and before dividends to minority stockholders of consolidated subsidiaries, as reported in *Moody's Manual of Investments*. The twenty companies are among the twenty-five largest in the industry in terms of December, 1948 ingot capacity, and include all of the first thirteen. Of the five firms excluded among the first twenty-five, four operate primarily in other industries, and one does not publish financial data. The ingot capacity of the twenty firms was 87.9 per cent of industry capacity as of December, 1948.

[c] Includes all basic steel companies publishing ingot production data. These nine companies are among the eighteen largest, and include all of the first four. Their ingot capacity was 72.0 per cent of the industry total as of December, 1948.

[d] Not computed because of wartime changes in the product mix.

Along with cost-of-living arguments, increasing output per man-hour was among the criteria advanced by the union as justifying wage increases.[10] Increasing output per man-hour permits proportionate wage increases without increased unit labor costs. Because of the importance

[10] Increased physical productivity of labor might logically be included among the factors causing an increased demand for labor in the industry. However, to demonstrate the operation of this factor, data on the marginal physical productivity of labor would be needed, whereas data are available only for average physical productivity. It is possible, although not probable, that marginal productivity was decreasing while average productivity was increasing.

of existing conditions as a point of departure in conscious decision making, unions may find it easier to win wage increases which do not increase labor costs (*i.e.*, those which merely prevent decreases) than those which do.

The first column of Table II shows output per man-hour in the basic steel industry. Management in the basic steel industry has generally denied the relevance of output per man-hour to wage increases. It contends that the relevant measure of productivity is the "employee performance rate," which it defines as output per man-hour in plants whose capital equipment has not been increased or improved during the period under consideration. This rate, according to two large steel producers, fell between 1939 and 1948.

The rise in profits has also been frequently cited by the United Steelworkers as grounds for wage increases. The union has tried to convince its members and the public that high profits are evidence of an inequitable relation between wages and profits, and that they would permit wage increases to be made without price increases. To the extent that these arguments, irrespective of their merit, create public opinion favorable to the union, they increase the union's bargaining power. It is profits before taxes which are relevant to the second argument, since taxes would not be paid on any portion of profits which was diverted into wage increases. It should be stressed, however, that profits before taxes are not relevant to concepts of equity such as "fair return on investment."

Two measures of changes in profits before taxes are given in Table II. They show substantial increases in profits in the postwar years despite wage increases. The data used show smaller increases than do those used by the union, which charges steel corporations with creating excessive reserves for depreciation, depletion, inventory losses, and taxes. Management, however, feels that these data overstate profits, and that only data in which charges for depreciation were based on current replacement costs would give a true picture.

So far, the economic factors affecting wage determination have been considered. There remain some important institutional factors, foremost among which is the effect of fixed-term wage agreements. In a period of rapid inflation, such agreements may cause wage increases in unionized industries to lag behind consumer prices, and perhaps to lag behind wages in unorganized industries. Thus the sharp rise in the cost of living during the summer of 1946 came just after the first-round wage increase in basic steel, and it was nine months before the union could act to catch up with it. The period between the first and second rounds was fourteen months; the same period elapsed between the second and

third rounds. In contrast, during the inflation of 1916, the United States Steel Corporation increased its common labor rate at Pittsburgh three times in eleven months, each time by 10 per cent or more.[11]

The disadvantage to the union of fixed-term agreements was intensified by the two-year no-strike clause contained in the 1947 agreement. In part, the United Steelworkers may have negotiated a two-year agreement without a strike in 1947 because of its support of the Democratic national administration and its foreign policy, and the union's consequent desire to avoid action which would endanger national and international economic stability. However, the possibility cannot be overlooked that the two-year agreement was to some extent the result of mistaken economic forecasting. The United Steelworkers and the national CIO had frequently asserted that failure to increase wages, by curtailing purchasing power, was creating a threat of depression. They cited slight downturns in any general economic indicator as evidence that a depression might be starting. To the extent that such arguments influenced the union's own strategy, they would make long-term fixed wage agreements appear to be to the union's advantage.

An institutional factor working in the opposite direction was the rivalry between international unions. The rivalry between the United Steelworkers and the United Mine Workers has been particularly bitter since the Mine Workers left the CIO in 1942. Bitter rivalry also existed between the United Steelworkers and other "right wing" CIO unions, on the one hand, and the since expelled "left wing" unions on the other. Even where the policies of different international unions were in harmony, some rivalry in wage matters may have been present. Thus the prestige of the leaders of the United Steelworkers would have suffered in the eyes of the membership had the United Auto Workers won substantially larger wage increases.

Pressure for inter-industry wage uniformity, or for at least an appearance of uniformity, is generated by such rivalry, and operates on the management side as well. Management recognizes the rôle of wage settlements in maintaining the prestige of union leaders. It is therefore forced to include as an element of its wage policy its own preference as between the existing leaders of the unions with which it bargains and their potential rivals. Such factors give rise to an observable inter-industry transmission of wage settlements which has become known as "pattern setting."[12] However, the use of the time sequence of wage settlements as evidence of causal relation involves some danger. The

[11] Based on unpublished data supplied by Professor John T. Dunlop of Harvard University.

[12] For a more complete discussion of pattern setting, see Arthur M. Ross, *Trade Union Wage Policy* (Berkeley and Los Angeles, University of California Press, 1948), pp. 49-74.

observed similarities are to some extent the result of the operation in different industries of similar causal factors such as labor shortages and rising living costs, rather than the result of pattern following.

The most clear-cut case of the operation of inter-industry wage patterns in basic steel is found in the wage increase of July, 1948. This increase followed steel management's refusal to grant an increase three months earlier, and the union's adherence to its no-strike agreement. It also followed negotiated wage increases in the auto, rubber, coal, and electrical manufacturing industries. Although the steel producers had the power to "hold the line" on wages, they had pledged to reconsider if costs continued to rise. They must have realized that failure to raise wages after other industries had done so created a dual danger. On the one hand, it would have seriously hurt the position of the leaders of the United Steelworkers, and would have benefited John L. Lewis and "left wing" leaders. On the other hand, it would have created resentment against management among the workers, which union leaders might have tried to utilize.

The remaining institutional factor which will be discussed is the influence of the union on price policy, and the influence in turn of price policy on wages. The United Steelworkers took every opportunity to publicly criticize increases in the price of steel. This reinforced strong pressure from Congress and the executive branch of the government and criticism of price increases by the press. It was probably because of this combination of forces that steel prices were not raised more than they were.

During the 1946 strike, when management openly stated that the wage increase it could offer was directly related to the price increase it received,[13] the union did not take any action to support a price increase.[14] It may well be that by joining the industry in a plea for a price increase the union could have averted or shortened the strike. After the removal of government price controls, the CIO on several occasions asked that they be restored. This policy unquestionably had the support of the United Steelworkers.

To the extent that the union added to the pressures which helped to hold down steel prices, it probably also had a slight unintended effect in holding down wages. Higher prices might have been an incentive for a somewhat faster rate of expansion of capacity, which would undoubtedly have increased the demand for labor. Higher price levels would also have made strikes more costly to management, and at the same

[13] Statement of Benjamin F. Fairless, President of the United States Steel Corporation, February 18, 1946.

[14] United Steelworkers of America, *Proceedings of the Third Constitutional Convention* (Indianapolis, n.d.) p. 24.

time raised the expectations of unions, thus encouraging higher wage settlements. Finally, employers could probably have defended higher prices successfully before the government and the public only by pointing to increased labor costs. But even with proportionally increased labor costs, price increases under the existing demand conditions would have increased profits. If this analysis is correct, the United Steelworkers' policy of demanding that wage increases come out of profits was likely to result in somewhat smaller increases than a policy of indifference as to the source of wage gains.

TABLE III.—COMPARISON OF INDEXES OF MONEY AND REAL WAGES AND BASE PRICES, BASIC STEEL: 1914, 1920, 1939 AND 1948[a]

Year	Average Hourly Earnings			Base Prices of Finished Steel[d]
	Money		Real[b]	
	Basic Steel[b]	Basic Steel as a Per Cent of all Manufacturing[c]		
Indexes, 1914=100				
1914	100	100[e]	100[g]	100
1920	248	110[f]	127[g]	244[h]
Indexes, 1939=100				
1939	100	100	100	100
1948	199[i]	92[i]	113[i]	161[i]

[a] Data are annual averages except as noted. Where available, data are for the full base year, and for the peak month or quarter of average hourly earnings in basic steel for the other year.
[b] Computed from data of the U. S. Bureau of Labor Statistics.
[c] Computed from data of the National Industrial Conference Board for 1914–20, and from data of the U. S. Bureau of Labor Statistics for 1939–48.
[d] Computed from the *Iron Age* finished steel composite price.
[e] July.
[f] Fourth quarter.
[g] Annual average hourly earnings divided by December consumer prices.
[h] December.
[i] September.

Apart from the union's explicit price policy, the very existence of the union may have acted to hold down prices, wages, and profits. In the absence of a union, steel producers might have raised prices more to take advantage of the temporary increase in demand, and raised wages more to overcome the temporary shortage of labor. This course of action was probably restrained by fear that the union could success-

fully maintain the higher level of wages after the demand for steel had declined. A slight increase in wages, if thought to be permanent, could outweigh a large temporary price increase. Given the political climate

TABLE IV.—COMPARISON OF CHANGES IN AVERAGE HOURLY EARNINGS, SELECTED INDUSTRIES, 1939–48

Industry[a]	Per Cent Unionized, 1946[b]	Average Hourly Earnings, September, 1948[c]	
		As a Per Cent of the 1939 Average	As a Per Cent of May, 1945
Basic steel	80 to 100	199	139
Crude petroleum	20 to 39	196	146
Non-metallic mining	20 to 39	233	146
Cotton textiles	20 to 39	289	169
Silk and rayon textiles	20 to 39	281	165
Confectionery	20 to 39	221	141
Non-alcoholic beverages	20 to 39	193	132
Butter	20 to 39[d]	223	146
Ice cream	20 to 39[d]	187	142
Power laundries	20 to 39	199	125
Cleaning and dyeing	20 to 39	197	126
Wholesale trade	1 to 19[e]	193	135
Retail trade	1 to 19[e]	203	142

[a] Includes all industries less than 40 per cent unionized in 1946 for which data on both degree of unionization and average hourly earnings are available.
[b] Source: "Extent of Collective Bargaining and Union Recognition, 1946," *Monthly Labor Review*, Vol. LXIV (May, 1947), pp. 765 ff. Data represent the estimated proportion of workers covered by collective agreements. More recent data are not available.
[c] Source: *Monthly Labor Review*. Data are for production and related workers, or non-supervisory workers.
[d] Data on unionization are for "dairy products."
[e] Data on unionization are for "wholesale and retail trade."

which surrounded the industry, substantial price increases would undoubtedly have enabled the union to make some wage gains.[15]

III. *Comparisons With Other Wage Movements*

As a check on the validity of the analysis thus far, some comparisons with wage changes in another period and in other industries may prove useful. The period 1914 to 1920 has been chosen for comparison with the period 1939 to 1949. Both start with the beginning of war in Europe and end with the peak of the immediate postwar inflation. Some comparative data for these periods are shown in Table III. In both 1914 and 1920, only a very few highly skilled workers in the basic steel

[15] This argument has been advanced by W. A. Morton with respect to administered price industries generally ("Trade Unionism, Full Employment and Inflation," *Am. Econ. Rev.*, Vol. XL, No. 1 [March, 1950], p. 18).

industry were covered by collective bargaining. The steel strike of 1919 had been decisively broken by the employers by the start of 1920, and cannot be held responsible for the wage levels reached later in that year. Several alternative measures of steel workers' earnings for the period 1914 to 1920 are available, but all show a larger increase than is shown in Table III.

The data of Table III show that steel workers made larger percentage gains in money and real hourly earnings during the period 1914 to

TABLE V.—COMPARISON OF CHANGES IN AVERAGE ANNUAL EARNINGS PER EMPLOYEE, SELECTED INDUSTRIES AND GROUPS, 1939–48

Industry or Group	Per Cent Unionized 1946[a]	Average Annual Earnings, 1948[b]	
		As a Per Cent of 1939	As a Per Cent of 1945
Basic steel	80 to 100	208[c]	118[c]
All employees	29 to 33[d]	221	127
Crude petroleum	20 to 39	212	129
Non-metallic mining	20 to 39	254	135
Personal services	1 to 39[e]	204	124
Wholesale and retail trade	1 to 19	210	134
Finance, real estate, and insurance	1 to 19[f]	168	125
Federal government, general	1 to 19[f]	257	139
Public education	1 to 19[f]	192	143
Services, private households	—[g]	272	114
Agriculture	under 1	360	120

[a] Source: See note b of Table IV, except for "all employees."

[b] Source: *Survey of Current Business*, except as noted. Data are average annual earnings per full-time equivalent employee.

[c] Source: American Iron and Steel Institute, average wages and salaries of employees engaged in the production and sale of iron and steel products.

[d] Total number of full-time equivalent employees (48 million), divided by estimated total union membership (14 to 16 million).

[e] Data on unionization apply only to barber shops, laundries, cleaning and dyeing (all 20 to 39 per cent unionized), and beauty shops (1 to 19 per cent unionized). These account for the great majority of workers in the personal services group.

[f] Data on unionization apply to clerical and professional employees, except in transportation, communication, theaters, and newspapers.

[g] Not available; probably negligible.

1920 than during the period 1939 to 1948. In the earlier period steel workers' money earnings increased relative to earnings in all manufacturing, while in the more recent period they decreased. This evidence does not mean that the smaller percentage gains of steel workers in the second period are a result of unionization. It does show, however, that the efforts of the union were not sufficient to offset apparent differences in other factors, probably including the smaller increase in steel prices, which operated to keep the percentage wage increases smaller during the unionized period.

Tables IV and V represent two methods of comparing the earnings of steel workers with those of less highly unionized workers. Table IV is a comparison of changes in average hourly earnings between 1939 and September, 1948 (the peak month for steel average hourly earnings in that year); and between May, 1945 (the month of the end of the war in Europe) and September, 1948. During the whole period from 1939 to September, 1948, five of the twelve less highly organized industries had smaller percentage increases than basic steel, one had the same increase, and six had larger increases. In the period from May, 1945 to September, 1948 four of the twelve had smaller increases than basic steel, and eight had larger increases.

Table V shows changes in annual earnings per full-time equivalent employee from 1939 to 1948 and from 1945 to 1948. It permits a better coverage of less highly unionized sectors of the economy than does Table IV, and it also shows all the employees in the economy taken together. In both periods, the percentage increase in the earnings of steel workers was less than that for all employees. Since the all-employees group is not more than one-third unionized, and includes employees in trade, finance, service industries, government, and agriculture, it seems clear that the earnings of this group as a whole are determined largely by forces other than collective bargaining. Of the nine narrower industries or industry groups shown in Table V, only three had smaller percentage increases than basic steel for the whole period, and only one for the period 1945 to 1948.

Once again, these data do not mean that steel workers received small wage increases relative to other groups because they were unionized. They might be used to argue that the threat of unions, or the process of becoming unionized, increases wages more than complete unionization. It is clear at least that the efforts of the United Steelworkers were not enough to offset the forces working toward larger relative increases for other groups.[16] This contrasts with the picture sometimes given of steel workers enjoying gains at the expense of unorganized workers.

IV. *Conclusion*

What is the answer suggested by the evidence and reasoning above to the question, "Was collective bargaining in the basic steel industry during the inflation of 1945-48 an independent cause of wage increases?" The answer clearly seems to be that collective bargaining was

[16] I am aware that the small percentage increases in steel workers' earnings relative to certain other groups are consistent with larger absolute increases, because steel workers started on a higher base. This point has been stressed by Arthur M. Ross among professional economists, and by John A. Stephens among the spokesmen for steel management. I remain convinced that percentage increases are the relevant way to make inter-industry wage comparisons, and that this method does not involve any statistical fallacy.

not a significant factor. Its effects on wages were largely confined to altering somewhat the timing of increases, the form in which they were paid, and their distribution among workers in the industry. From the available evidence and the logic of the situation it is equally easy to argue that collective bargaining in the basic steel industry during this period kept wages below the level which they would otherwise have reached, or to argue that it raised wages above such a level.

This, of course, does not mean that steel workers received no benefits from collective bargaining, since raising general wage levels is but one of a union's many goals. Steel workers undoubtedly benefited from the grievance procedures established by collective bargaining, from the wage rationalization program, and from improved working conditions. Collective bargaining has increased the freedom and dignity of the individual worker, and stimulated management to take a greater interest in the welfare of all employees. At the same time, the union provided a new channel through which workers could play a constructive part in the life of their communities.

To speculate about "what would have happened if" always involves risks. Nevertheless, one of the main ways in which we can appraise the impact of institutions is by asking what would have occurred if they had not been present. The conclusions stated above regarding the effects of collective bargaining on wage levels are based on the following reasoning:

a. Factors other than collective bargaining seem adequate to account for the wage increases which took place. The principal factors which would have operated in the absence of bargaining were the tremendous increase in the demand for steel, the consequent increase in the demand for labor by the steel industry, and the shortage of labor relative to the quantity demanded at existing wage rates. The sharp increase in the cost of living and the substantial increase in output per man-hour might have been less important contributing factors.

b. Certain aspects of the union's presence and activity tended in themselves to restrain wage increases. First, wage increases were undoubtedly delayed by fixed-term collective agreements. Second, the union's publicity and political pressure against price increases, to the extent that they were effective, tended to keep down prices, profits, and probably wages. Third, it is likely that the existence of a strong union prevented employers from making temporary wage increases. Management probably feared that if wage increases were granted to overcome labor shortages, the union would be able to maintain these higher wages even after the demand for steel decreased.

c. The percentage increase in the real hourly earnings of steel workers from 1939 to 1948 was smaller than that during the non-union period

1914 to 1920, and the percentage increases in the money earnings of steel workers from 1939 to 1948 and from 1945 to 1948 were smaller than those of many groups of less highly unionized workers during these periods.

The conclusion that collective bargaining did not significantly raise wage levels applies to a comparison between bargaining as it existed and none at all. It does not mean that the wage increases for which the United Steelworkers fought could have been obtained in a unionized industry without a fight. Once a strong union is present, the effects of fixed-term wage agreements and downward wage rigidity are felt regardless of the amount of the union's wage demands. Hence if the United Steelworkers had been less aggressive, wages in the industry would probably have been lower than they were, despite the short supply of labor.

These conclusions apply to the period 1945 to 1948. There remains the question of how well they apply to the years 1949 and 1950.

The basic steel wage negotiations of 1949 started during what proved to be a temporary slump in the demand for steel. There is little doubt that the workers would have received no increase in wages or other benefits at that time in the absence of collective bargaining. The 1949 agreement was reached only after hearings before a government board of inquiry, and a month-long strike following the issuance of the board's recommendations of benefits. The agreement provided for noncontributory pensions and increased contributory social insurance. These benefits can be attributed to the union, both as regards form and amount.

It seems clear not only that no increase would have been given at that time in the absence of the union, but also that the industry in the absence of the union would probably not have chosen at any time to pay substantial increases in the form of pensions and insurance. The exact cost or value of the 1949 agreements is difficult to estimate on a cents per hour basis, and varies substantially from company to company. The variation is a result of differences between companies in preexistent pension and insurance plans and in the average age of their work forces. Estimates based on published statements by several of the larger basic steel producers indicate total costs ranging up to about 10 cents an hour in some companies, with very substantially lower costs for others.

In November, 1950, a fifth-round wage increase which averaged approximately 16 cents an hour was negotiated in the basic steel industry. The negotiations which preceded this increase took place during a period of mounting inflationary forces generated by the war in Korea. The cost of living was rising steadily—the Consumers' Price Index had gained almost five points in the five months preceding the settlement.

The steel industry, with most of the expanded defense program not yet underway, already had large backlogs of unfilled orders. Unemployment was shrinking, and steel producers were again experiencing difficulty in getting labor. Workers in other industries, including the automobile, agricultural implement, and electrical manufacturing industries, had recently received substantial wage increases. The gloomy international situation seemed to insure that the inflationary forces would be more than temporary.

In view of these conditions, the analysis previously given of the first three rounds seems generally applicable to the fifth round. The 1950 wage increase was not primarily a result of collective bargaining. Rather it was a result of rising aggregate demand operating by way of the collective bargaining process.

Negotiated wage increases are one of the most visible manifestations of inflation, but their visibility should not be confused with causation. The primary responsibility for increased wages in such circumstances does not lie with either unions or management; it lies rather with the Congress and the other agencies which control monetary and fiscal policy. The best policies for preventing or halting inflation do not seem to me to be general wage and price controls and government regulation of the collective bargaining process, although lack of sound policy in other areas may lead us to the point where they become necessary evils. What is really needed is a basic anti-inflation program which will prevent the creation of excess demand by means of such unpalatable and old-fashioned but effective medicines as increased taxes and curtailed credit.

COMMUNICATIONS

Notes on the Dollar Shortage: A Comment

In his interesting "Notes on the Dollar Shortage,"[1] Professor W. F. Stolper concludes that "an increase in American imports, though desirable, will not by itself lead to the solution of the dollar problem."[2] He supports this opinion by reference to the dependence of exports and imports upon each other. Moreover "the present situation . . . (is) one of suppressed disequilibrium." "Investments and/or exports of many European countries depend on their imports" and "these imports can only be paid for by exports." Hence in his view a reduction of European imports from the United States by means of import control would "of itself lead to a fall in their exports."

Taken literally, Professor Stolper's conclusion would seem to indicate that an unbalance in the country's international payments could never be adjusted as he, surprisingly enough, thinks that "income adjustments by themselves will not lead normally to the establishment of the convertibility condition" either.[3] But in that event neither exchange controls nor bilateralism and discrimination can readjust the balance as they would probably lead to a greater displacement of internal demand than that caused by an increase in American demand (and the turning of the terms of trade in favour of Europe) because profits (and with them savings) would increase less than in the former case. His belief, moreover, that we can escape from this impasse by a realignment through a currency devaluation seems to be in ever greater contradiction to these conclusions, for a currency realignment would obviously change the terms of trade of the devaluating countries in their disfavour, and therefore *ceteris paribus* would lead to a *greater* fall in imports and thus to an even greater decline in exports. It is also odd that while Professor Stolper finds "discrimination" politically intolerable he is quite prepared to accept a wholesale devaluation of currencies against the dollar: surely the effect on the American exporter is identical. The only difference is that in the former case no dumping of European products on the American market is induced: a difference which can hardly be considered unfavourable from an American point of view.

Professor Stolper's paradoxical results arise partly from his disregard of the effect on the terms of trade of the different policies pursued by the United States and her customers, partly from a confusion of the total propensity to import with the import of necessities and finally from his disregard of the effects of import policy on thrift and of a variation of the rate of savings on the foreign balance.

[1] *American Economic Review,* Vol. XL (June, 1950), pp. 285-300.

[2] *Ibid.,* p. 300.

[3] This is all the more surprising as Mrs. Joan Robinson has conclusively shown that a fall in incomes (wages) re-establishes "equilibrium" (in the sense of absence of direct controls and a balanced current account) even if "elasticities" are perverse. ("The Pure Theory of International Trade," *Rev. Econ. Stud.,* Vol. XIV (2) [1946-47], p. 102.)

Professor Stolper apparently sees in the "Dollar Shortage" a universal "disequilibrium in the international balance of payments." This is perhaps less than the whole picture. The dollar shortage is an instinctive attempt by the countries outside the United States to prevent a further deterioration of their terms of trade by a severe control of American exports. There is no reason to believe that the United States would make tariff concessions in exchange for a reduction of the quantitative restrictions against its exports. Therefore unilateral abolition of exchange and import controls in Europe would turn the terms of trade in favour of America. It may be feared that the increase in competition in the U.S. markets would unleash the hostility of U.S. producers and by invoking the escape clause of the agreement of tariffs lead to an increase in U.S. protection.[4] As the United States is already far richer than Europe, the consequences of this development would further aggravate the present inequality in the international distribution of wealth.

The resistance of Europeans against unilateral lifting of quantitative controls without assurance of either tariff concessions by the United States or a guarantee of sustained high effective demand in the United States can hardly be explained by their obtuse wickedness. It is due to the very real need to escape from an impossible position into which they were thrust by the losses caused by the war. As Mr. Kahn put it, "the phenomenon presents itself not (by the non-United States part of the world) greedily moving away from free-trade policy and securing a gain on the terms of trade (at the expense of a larger loss to the United States). It is rather that of (countries other than the United States) which, for historical reasons (have) got themselves involved with import restrictions, and other forms of 'dollar-earning' and 'dollar-saving' government interference, and (find) that devaluation, taken beyond a certain point, even though it will render such restrictions and interference less necessary, will reduce the average standard of living because the adverse movement of the terms of trade will outweigh the benefit of a greater resort to international division of labour."[5]

A sharp increase in American national income, on the other hand, fully employing existing U.S. capacity, would lead to a brusque increase in the U.S. demand for foreign goods. Not only would this increase the volume of imports at existing prices but it would probably tend to improve the European terms of trade. Hence less European exports would be required to buy American essential goods and the European monetary position would be eased. Therefore the need for direct restriction of imports from America would be lessened. Indeed this is exactly what seems to be happening at the present moment. Despite the devaluation of almost all non-dollar currencies, the American terms of trade are worsening and the American excess of exports is being transmuted into an excess of imports.

Another not dissimilar slip occurs in discussion of the internal effects of import restrictions. Import restrictions might *change* the schedule of demand

[4] This has already happened in several instances (gloves, hats, watches—and, in a somewhat different form, butter).

[5] R. F. Kahn, "The Dollar Shortage and Devaluation," *Economia Internazionale,* Vol. III (Feb., 1950), p. 103.

and not merely cause a *frustration* of a part of an *unchanged* demand schedule. Controls, very much like other outside influences on demand, *e.g.*, advertising, modify and divert it. Thus Professor Stolper's recommendation for the abolition of exchange control by devaluation would not merely lead to a violent change in the external terms of trade but also to a change in the internal distribution of income against wages. This in its turn might induce (or at least aggravate) the inflationary spiral and possibly overwhelm the currency. If then, additional deflationary measures are recommended in order to make devaluation and decontrol "effective," it is questionable whether the policy (far from representing an optimum) would not involve much greater losses for the poorer country than the policy of restriction actually followed, if only because of the resulting violent general reduction of investment and consumption.

The position which we deal with is neither static nor is income distribution ideal. It follows, therefore, that it would be wrong to analyse it under the assumption that controls (and thus their abolition) do not alter the consumption habits of the population. Measures of liberalisation may result in an increase in the propensity to import and a decline in saving. The rich will be enabled and tempted to purchase goods from abroad which were hitherto not available. The process is more subtle than Professor Stolper, who sees the force of this argument, believes.[6] The saving will have been enforced by control not merely directly on those consumers who have hitherto not bought home goods because they did not like the quality. In many cases the consumers after liberalisation switched from domestic goods. And among the domestic goods which had been bought in default of (better liked) foreign products there are many the production of which at the margin did not absorb productive factors, *i.e.*, in the case of which marginal sales represent pure profits (or taxes). From this point of view[7] even the more intense competition engendered by liberalisation and the consequent reduction in monopolistic profit margins might be unfavourable as it will increase the propensity to consume and lead to a fall in saving. Thus not only can savings out of a given national income with a given distribution vary as a result of liberalisation because of increased temptation and thus aggravate the balance-of-payments problem, but on top of it the distribution of the national income might move against profits and thus lead to a further reduction in the propensity to save.

Now it could be argued that "controls" by enforcing savings on unwanted goods would "diminish welfare" as consumers would have preferred to spend their income on imported goods.[8] This argument might carry weight if the distribution of the national income would be perfect. In that case the loss arising out of an interference with the consumers' free choice would not be offset by any gain due to the capacity to maintain a higher level of employ-

[6] Stolper, *ibid.*, p. 295.

[7] Of course measures would have to be taken to tax or to force the reinvestment of these profits. Otherwise, the inequality of income distribution would increase.

[8] Professor Stolper seems to ignore almost completely the law of diminishing marginal utility in connection with imports.

ment or arrive at a more equitable distribution of national income. The argument that if this were desired, it could be accomplished more effectively (because involving no interference with the allocative efficiency of the system) by lump sum taxes and subsidies does not bear examination. In an overwhelming part of the globe the administrative capacity to devise and enforce a sophisticated economic policy does not exist. Most customs officers, however, can identify luxury imports when they see them. Thus the maintenance of control leads to important and often decisive gains which are left out of account in most "theoretical" analyses.

Professor Stolper views Italian policy with complete approval.[9] Yet there can be no doubt that the import of Cadillac cars, Coca-Cola, nylons and such like products from the United States which bulk large in Italian costs has seriously aggravated the difficulties in the way of a sensible employment policy. These goods are not required for an increase in investment. Nor are they necessary from the point of view of general welfare. If the rich Italians are forced to buy home-produced cars on which the profit margin is very high, it is by no means certain that exports will immediately be reduced or that the level of employment will remain unchanged. What might happen is that the substitution of the import of machinery for these luxuries would enable an increase in total employment and lead to an increase of turnover. Moreover, by increasing the output of Italian engineering products the policy might result in a decrease in Italian costs and thus in increased chances for Italian exports.

In dismissing the possibility that an increase in employment and income in the United States would help solve the dollar problem, Professor Stolper ignores the variation with the level of employment of the elasticity of the demand of a country for foreign goods. In conditions of over-full employment the demand for imports becomes relatively inelastic for price rises, and inelastic for foreign price cuts. The full employment of the home suppliers will make retaliation to foreign price cuts unprofitable. Any decrease in foreign prices will result in hugely increased orders for the foreign suppliers. Thus full employment contributes to the solution of the problem by changing the terms of trade and thus promoting exports at higher prices, so enabling the foreign country to buy American exports at a smaller sacrifice of its own productive efforts.[10]

I conclude, therefore, that Professor Stolper underestimates the importance of the American employment position and of its effects on the dollar "shortage." Nor can it be argued that exchange restrictions merely reduce the factor

[9] Italy does not differ from that of Western Germany. The E.C.A. Reports on both countries do not seem to support the earlier favourable views expressed by numerous academic economists, *e.g.*, Professor Lutz, Mrs. Lutz, Professor Haberler, etc.

[10] *Cf.* T. Balogh and P. P. Streeten, "The Inappropriateness of Simple 'Elasticity' Concepts in the Analysis of International Trade," *Quarterly Review*, Banca Nazionale del Lavoro, Roma, 1950. An analysis of the U.S. balance of payments suggests that the *propensity* to import, and not merely imports, is an increasing function of employment. Professor Stolper's (conventional) model based on a *constant* propensity is unrealistic and misleading. *Cf.* my article "Rearmament and the U.S. Balance of Payments," *Bulletin* of the Oxford University Institute of Statistics (1951).

allocative efficiency of the country imposing them, though they may have that influence. But their effects on saving and investment are vastly more important. They may well enable an increase in investment and saving even in conditions of "suppressed" disequilibrium. Moreover, their effect on the terms of trade represent the overriding consideration. Thus the present policy of the "non-liberalist" countries of Western Europe is hardly as self-stultifying as Dr. Stolper's interesting essay might lead us to suppose.

T. BALOGH*

* The author is a Fellow in Balliol College, Oxford, and senior member of the Oxford University Institute of Statistics.

Rejoinder

Meeting an adverse balance of payments by exchange controls and discrimination rather than by devaluation has, as everyone agrees, advantages and disadvantages. One must decide the issue depending on how one estimates the quantitative change in the terms of trade, the importance of planning rather than a free-market behavior, and a host of other variables. Mr. Balogh's views on these matters are well known; and with all respect to his cogent and lucid contribution let me simply record that they differ from my own.[1]

Perhaps, however, I should address myself briefly to the important analytic issue of the interdependence of imports and exports, so as to attempt to dispel any paradoxes in connection with this important theoretical question! Machlup, Metzler, Kindleberger, Bloomfield, and many others, including textbook writers,[2] have by now established in great detail the following proposi-

[1] The necessity to be brief limits me to this footnote and only to one of the facts asserted by Mr. Balogh. No doubt he meant it purely rhetorically that "there can be no doubt that the import of Cadillac cars, Coca-Cola, nylons and such-like products from the United States which bulk large in Italian costs, has seriously aggravated the difficulties of a sensible employment policy." I cannot see that this is a *fact*. Besides, if the issue really were between Cadillacs on the one hand and vitally needed foodstuffs and raw materials on the other, there would be hardly any point worth fighting about. The facts are, of course, that exchange controls keep out vitally needed raw materials and that the imports of Cadillacs, etc., are not worth talking about. Not only that: under bilateral agreements a certain number of Cadillacs or their equivalent usually have to be taken by each party to the agreement in order to receive the really wanted products. (For example, see United Nations, *A Survey of the Economic Situation and Prospects of Europe* [Geneva, 1948], p. 97 and elsewhere.)

I also wonder how the British people feel about bilateral agreements now that their meat ration has been cut substantially because of Señor Peron. Or whether the Danes are entirely happy about their inability to have their prices increased as much as they originally liked. It is an interesting factual problem whether Britain gains more from exploiting Denmark than she loses from being exploited by Argentina. Certainly, however, the *a priori* case for bilateralism is not clear.

[2] F. Machlup, "International Trade and the National Income Multiplier" and L. A. Metzler, "Underemployment Equilibrium in International Trade," *Econometrica*, Vol. 10 (1942), pp. 97-112; L. A. Metzler, "The Transfer Problem Re-Considered." *Readings in the Theory of International Trade* (Philadelphia, Blakiston, 1949); C. P. Kindleberger, "The Foreign-Trade Multiplier, the Propensity to Import and Balance-of-Payments Equilibrium," *Am. Econ. Rev.*, Vol. XXXIX (Mar., 1949) and "Rejoinder," *ibid.*, Sept.,

tion: An increase in a country's exports will, *ceteris paribus,* increase employment and output in this country. Normally this increase in output and employment will result in larger imports which will in turn have successively smaller repercussions on the employment and output of the other country, and so forth. The balance of payments will therefore not be completely adjusted by changes in output and employment alone. The same result follows also as a rule when two countries have autonomous uncoordinated shifts in their investment schedules. In this well-known sense it is correct to say that income changes will not lead to a complete adjustment in the balance of payments. The change of wages with which Mrs. Robinson's celebrated article deals is, of course, not an income change in this sense at all, but a price change. It can be shown that a combination of proper income (in the Keynesian sense) changes and price changes will normally lead to an equilibrium in the balance of payments,[3] without exchange controls or *involuntary* capital movements.

Among the *ceteris paribus* assumptions which foreign trade multiplier theory has properly made are (1) that exchange rates be held constant and (2) that the funds necessary to pay for any imbalance in the international accounts are always forthcoming. When assumption (2) is dropped, as it must be for a long-run analysis, it follows that imports have to be limited to what can be paid for by exports plus gifts plus voluntary capital movements. In this sense imports and exports are obviously interrelated[4] though Mr. Balogh is, of course, quite right in insisting that imports and exports do not have to be equal to each other at any moment of time—except, of course, when they are so fixed by a bilateral agreement!

W. F. STOLPER*

1949 and *The Dollar Shortage* (New York, Wiley, 1950); A. I. Bloomfield, "Induced Investment, Overcomplete International Adjustment, and Chronic Dollar Shortage," *Am. Econ. Rev.,* Vol. XXXIX (Sept., 1949) and *Capital Imports and the American Balance of Payments* (Chicago, 1950); Enke and Salera, *International Economics* (New York, Prentice-Hall, 1947); P. A. Samuelson, *Economics* (New York, McGraw-Hill, 1949).

[3] Svend Laursen and Lloyd A. Metzler, "Flexible Exchange Rates and the Theory of Employment," *Rev. Econ. and Stat.,* Vol. XXXII (Nov., 1950), pp. 281-99.

W. F. Stolper, "The Multiplier, Flexible Exchanges, and International Equilibrium," *Quart. Jour. Econ.,* No. 257 (Nov., 1950). This article was already written and submitted when the "Notes on the Dollar Shortage" were written.

[4] Therefore, both Laursen and Metzler, and myself have a balance of payments equation in our setups. Whether the equation is written: Exports = Imports, or Exports − Imports = predetermined capital movement, is logically evidently irrelevant, since the predetermined capital movement may be zero.

* The author is associate professor of economics at the University of Michigan.

Trade and Investment in Underdeveloped Areas: A Comment

I

Dr. Singer's analysis of the problems of underdeveloped areas[1] is open to criticism of two kinds: on the one hand, some of the arguments he uses do not appear to this writer to be sound, and on the other hand, he fails to use certain valid arguments that could be turned to good account. His conclusions are therefore incomplete, and the case he has made suffers accordingly.

To begin with, it may be noted that Dr. Singer, in common with most people who use the newly popular phrase, does not define "underdeveloped area." In strict logic one might suppose it meant a country or region the natural resources of which are less fully exploited than is justified, taking due account of all relevant economic factors, such as their richness, their accessibility, their location with respect to markets, the known occurrence of similar resources in other countries, etc.[2] At the other extreme, many people seem to use the term to mean any country that wants to increase its industrialization, without regard to the economic justification therefor. Dr. Singer appears to mean simply a country that is not at present industrialized. A commonsense definition, taking more account of usage than of pure logic, would be a country or region with a relatively low ratio of capital and entrepreneurship to other factors of production but with reasonably good prospects that additional capital could be profitably invested.

II

Let us first examine the respects in which Dr. Singer's arguments appear to be unsound. For the sake of clarity we may list them in a logical sequence.

A. *Merely Geographic Investment*

Dr. Singer inveighs against foreign investment that is geographically located in the underdeveloped countries but never becomes a part of their economies, remaining really a part of the investing economies instead. To advance his argument, however, he must be able to show that merely geographic investment is actually harmful to the recipient country, which must mean that it results in a lower real income for the inhabitants than they would otherwise have attained (or might reasonably have been expected to attain). This he signally fails to do. He returns to the concept again and again, yet he never explains what the harmful results are or how they are brought about.

The one specific point he makes is that the foreign investment may have diverted into the resultant specialized export industries such domestic investment potential and entrepreneurial ability as existed, to the detriment of more pro-

[1] H. W. Singer, "Trade and Investment in Underdeveloped Areas," a paper presented to the Annual Meeting of the American Economic Association in New York City on December 28, 1949, and printed in the *American Economic Review,* Vol. XL, No. 2 (May, 1950), pp. 473-85.

[2] On such a definition it might prove that some highly industrialized country was the most underdeveloped, since it might offer the greatest opportunity for increased exploitation of its resources.

ductive industries that might otherwise have developed. (Presumably he has in mind that "growing point" industries, treated next below, might otherwise have become established, though he does not expressly say so.) But this is pure speculation, as he himself admits. It is indeed conceivable that any particular investment, however productive, may have forestalled a still more productive venture by diverting resources from it, but in the absence of evidence to the contrary, we must assume that on the whole the most productive investments are made first.

The wording of Dr. Singer's frequent references to the idea of merely geographic foreign investment is open to the interpretation that he believes invested capital can bring no increase in real income to the capital-receiving country except to the extent that the direct returns on capital accrue to its nationals. Until he can bring evidence (which he has not done) to contradict the commonly accepted analysis of marginal returns to factors of production, however, the presumption remains that productively invested capital increases the real income of the community by more than its cost—*i.e.*, by more than the fair return to the suppliers of the capital—because the productivity of its labour and natural resources is increased as a result of the investment, and therefore there is a net gain therefrom even when the capital comes from abroad.

B. *"Growing Points"*

Dr. Singer justly emphasizes that manufacturing industry provides "growing points" to an extent unmatched by other activities in our present age. For the purposes of his argument, however, he would have to show that these "growing points" are improperly suppressed in underdeveloped countries, whether as a result of the conscious efforts of people who stand to gain thereby or because the long-run advantages which they would bring are inadvertently sacrified in the pursuit of immediate profit. This he also fails to do.

Dr. Singer seems to speak as if a given country may choose at will to develop "growing point" industries, whereas the factors that determine the economic feasibility of this type of industrialization in an underdeveloped country are largely outside its control. The present geographical distribution of these "growing points" is by no means accidental, as any student of the location of industry knows. It is the result partly of the location of resources, partly of historical sequences, partly of transportation costs, partly of the pattern of tariffs and trade controls, partly of the past and present geographic distribution of population and incomes, and partly of still other economic and social factors. (More correctly, the geographical distribution of industry and the other things mentioned are a composite group of mutually determined and mutually determining entities.) Failing convincing arguments to the contrary—and Dr. Singer gives us none—we must assume that the "growing points" have sprung up in those areas where on balance the conditions are most favourable. We certainly have no right to assume that any underdeveloped country could have simply willed them into existence within its own borders at some appropriate date in the past.

C. *The Terms of Trade*

Dr. Singer asserts that ever since 1870 the terms of trade have on balance gone heavily against producers of food and raw materials and in favour of the sellers of manufactured goods. There are very serious weaknesses in his argument, however, as the following propositions show.

1. Dr. Singer asserts that the failure of living standards to rise in underdeveloped areas is sufficient proof that his "trend of prices" does not merely reflect changes in real costs. But this is simply not true. An at least equally plausible explanation would be that the industrial countries have applied their share of the gains from falling real costs in part to raise living standards whereas the underdeveloped areas have applied them wholly or largely to support increased populations.

2. Dr. Singer's main argument for his conclusion that changes in real costs do not explain the relative price changes, however, is that productivity has increased more rapidly in industry than in the production of food and raw materials. But this is also open to dispute. It would appear that he is thinking of what we may call "abstract productivity," or productivity at the place of production, whereas the really significant concept may be called "effective productivity," or productivity in the sense of ability to deliver the product to the ultimate consumer. Improvements in transport techniques and other developments have vastly increased the effective productivity of once-distant raw material producing countries during the last eighty years; much more can now be profitably produced in and marketed from these areas. It is, thus, far from clear that effective productivity has increased more rapidly in industrial countries.

3. A logical extension of the argument just developed leads us to question the very existence of Dr. Singer's "price trend," and not merely its proper interpretation. He does not state what price data he has used. In view of the fact, however, that price data in underdeveloped areas are very hard to come by even today, let alone for eighty years ago, it is not unreasonable to suppose that he has relied mainly on data from industrialized countries. But surely the terms of trade for an underdeveloped country should be calculated in the internal markets of that country, where the primary producers (or local merchants on their behalf) sell their goods at a price net of transportation charges and other costs, and where they buy their imports at a price that includes all these costs. That is the exchange they make and those are the prices at which they make it. During the past eighty years the terms of trade in those markets must have been greatly and favourably affected by the tremendous reduction in transportation costs that have resulted from the introduction of the railway, the steamship, and the aeroplane, and by the equally important improvements in marketing methods and in the facilities for the physical handling and storing of commodities. In 1870 the price of moving a bushel of wheat from Pinkie, Saskatchewan (a settlement in western Canada that did not even exist then) to world markets would have been fantastic; so would have been the cost of getting a piece of machinery back. Yet today trade like that flourishes, as it does in every underdeveloped area. How can

it be that trade is now profitable in these areas which was unprofitable eighty years ago, and yet that the terms of trade have gone steadily against them?[3]

4. Nor need we stop with questioning this particular computation of changes in the terms of trade, for the basic concept itself is not universally accepted as valid. Space does not permit us to treat the question adequately here, but an important aspect of it may be mentioned, which has to do with the effects of progress and invention. Any given type of industrial product now offered to the primary producer in exchange for his products is more efficient than it was eighty years ago, as a result of improved techniques and new inventions. Completely new products are also available to him, some of which perform services that were then beyond the realms of possibility or even of imagination. Certain of these improvements and innovations reduce his costs of production or the cost of maintaining himself and his family, others expand the scope of his choice of enjoyments. All constitute betterments in the real income he can obtain in exchange for a given quantity of his products.[4] None can be adequately allowed for in any mere price index, nor therefore in the "terms of trade" as derived therefrom.

D. *Technical Progress*

The assertion that technical progress operates unequivocally in favour of producers of manufactured goods and against producers of raw materials implies that technological unemployment is relatively unimportant in industry; this begs many questions that have been largely forgotten since the 1930's but which were in fact never completely answered. It is also doubtful that the tendency of technical progress in manufacturing is any stronger in the direction of cutting the amount of raw material used per unit of output than cutting any other given element of cost; we cannot reject technological unemployment of direct labour and accept technological unemployment of raw materials without more supporting evidence than Dr. Singer gives us.

E. *North America*

One of the most puzzling features of Dr. Singer's paper is his evident reluctance, if not outright refusal, to accept the United States and, to a lesser extent, Canada as countries that were once underdeveloped but have now achieved industrialization with the help of foreign capital. He refers to North America as comprising " a third group of countries," apparently distinct from the capital-investing countries and the capital-receiving countries. He evidently bases the distinction on the large numbers of emigrants from Europe that went to the United States and Canada, and makes some use of calculations by the Italian statistician Corrado Gini, which purport to show that the entire

[3] It will be noted that, on the basis here suggested, it would be quite possible for both industrial and raw material producing countries to experience an improvement (or a deterioration) in their terms of trade at the same time, if transportation and marketing costs fell (rose) sufficiently.

[4] This does not contradict the point made above, that the improvement in real income may have been applied to maintain a larger population instead of to raise living standards.

stock of capital equipment in the United States is less than the capital value contributed by Europe in the form of immigrants in the prime of productive life.[5] But this was not by any means the only form of capital that Europe invested abroad, and it was not peculiar to North America. European capital in the form of vigorous emigrants and in other forms, singly or together, have gone out to all the world. If North America prospered and grew into an industrial power under a system in which immigrants invested themselves as well as their capital in the country, other areas did not have the same success with the same system. Indeed, it is even arguable that, instead of having received *too little* of their capital imports in the form of human capital (immigrants), many of the countries that remain underdeveloped have invested *too much* of their capital in this form (population increase).

A more orthodox explanation of this differential experience would be that the United States was blessed with resources that were so much richer and more varied in themselves, and so much closer to the mass markets of Europe, that it had a very favourable basis for economic development and population growth, which in turn made possible the rise of industrial production despite the competition of established industries in Europe. Why does Dr. Singer balk at this explanation, and insist on replacing it by an elaborately implausible hypothesis?

III

We may now consider certain additional factors, not mentioned by Dr. Singer, that help to explain the backwardness of underdeveloped areas.

A. *Excessive Profits*

It can be argued that capital and entrepreneurship get more than their due return, especially in the case of foreign capital and entrepreneurship invested in underdeveloped countries, and that the real income of these countries is thus improperly reduced. The argument may be roughly limned as follows:

If the world conformed reasonably well to the theoretical model of perfect competition, foreign capital and entrepreneurship would get only their fair returns, and foreign investment would bring a substantial net gain to the country, in accordance with the classical analysis referred to in an earlier paragraph. In fact, however, the world does not so conform. Many important elements of imperfect or monopolistic competition exist, as a result of which foreign capital and entrepreneurship are able to extract much more than their fair share of real income. Knowledge of the investment potential of distant countries is inferior to knowledge of opportunities nearer to the sources of investment capital, which introduces a bias against underdeveloped areas far

[5] Dr. Singer gives no precise reference, but see Corrado Gini, "Apparent and Real Causes of American Prosperity," *Banca Nazionale del Lavoro Quarterly Review* (Rome), No. 6 (July, 1948).

We may best leave it to Gini's fellow statisticians to comment on his curious calculus of capital, which in any event does not seem particularly relevant to Dr. Singer's argument.

from financial centres. A number of factors (some are mentioned in Dr. Singer's article, others will be referred to below) produce cumulative or spiral effects that favour industrial expansion in areas where some centralization of industry has already occurred rather than in new areas. Many development projects are of a highly specialized nature, or require very large-scale operations, so that few firms in the entire world have the capital, experience, and business connections essential to successful exploitation of the resources in question. A great deal of investment capital is controlled in large blocks by huge corporations and is used in substantial degree as a bargaining instrument to further the general advantage of the holder, or as a device for getting control of economic vantage points, instead of being, as the model of pure competition requires, invested in small lots with regard only to the interest or dividend return. These corporations often have far greater bargaining strength than the development-hungry governments with which they deal. The company can usually drive a hard initial bargain, because it always has the option of investing elsewhere and because it has the services of able technical advisers. Even after the initial investment is made, the company may be able to force the government's hand by threatening to transfer operations elsewhere, or by reducing its scale of operations, producing unemployment, and setting the stage for (if not actually organizing) revolutionary attempts against the government. The use of bribery, intimidation, and fraud must not be overlooked either.

B. *Freight Rates and Customs Tariffs*

Following the line of reasoning suggested above in connection with the location of "growing point" industries, an argument can be made that these have been unduly repressed in countries that are now considered underdeveloped. The argument makes use of certain discriminatory features of freight rate structures and of customs tariffs.

Common carriers throughout the world almost universally apply rate schedules which are based essentially on the "value of service" principle—a euphemism for charging what the traffic will bear. This principle is of course mitigated in a variety of ways by deference to public opinion, by varying degrees of governmental regulation, by the very impracticality of applying it in minute detail, and so on, but the fact remains that rate schedules are generally based thereon rather than on the "cost of service" principle. Typically, bulky raw materials are accorded favourably low rates, whereas manufactured and highly processed goods pay much higher rates. We may note in passing that the benefits to the producers of raw materials are largely illusory, since these same people must provide a large part of their own subsidy in the form of higher freight payments for finished goods (which are usually brought in from a distance). What concerns us here, however, is the bias this introduces in favour of locating industrial plants near ultimate markets instead of near the sources of raw materials. One of the first fields in which one might expect to see the industrialization of an underdeveloped country begin would be the initial processing of its staple exports, yet, unless this initial processing is very simple indeed, the result is to put the product in a higher freight bracket

and thus to offset some or all of the prospective gain in the real income of the country.

Tariffs and other barriers to international trade usually discriminate in a similar way against manufactured goods and in favour of raw materials.

Underdeveloped countries wishing to create or expand manufacturing industries are thus pretty well precluded from reaching the mass markets of others countries where large populations with relatively high incomes are located. They are thrown back on their own domestic markets, which are usually too small and poor to support any but light industries where the optimum size of plant is relatively small.

C. *Monopolistic Competition*

According to Dr. Singer, the reason for deterioration in the terms of trade of underdeveloped areas, and hence for the adverse effects on their real incomes that this implies, probably lies in the different price policies in secondary industry and in primary industry—the distribution of the results of technical progress in the form of higher factor returns in the first case, lower prices in the second. This argument is incomplete and unconvincing because, without a discussion of exchange rates, fiscal policies, monetary policies, and so on, there is no presumption that the movements of the real incomes of industrialized and non-industrialized countries have been in the divergent directions implied by their price policies. A much more convincing argument can be made, however, avoiding the logical quagmires into which concern for the terms of trade leads us like an economic will o' the wisp. The point is that the secondary industries are usually characterized by a much greater degree of monopolistic (or imperfect) competition than the primary industries, which implies that they are able to retain an undue share of total real income.

IV

Finally, we come to the question of corrective action. Dr. Singer's recommendations are good enough as far as they go, provided the efforts he suggests to promote capital reinvestment do not end up by frightening away more captial than they provide. If the foregoing analysis is reasonably close to the truth, however, there are a number of more concrete steps that could be taken for the benefit of underdeveloped areas.

The fundamental need is for the application of capital and entrepreneurship in a way that will bring a maximum of retained real income to the underdeveloped economies. This, in turn, implies that capital and entrepreneurship must be adequately paid, but not grossly overpaid. In part the need for capital at reasonable rates is now being met by various government agencies in the industrialized countries and by international organizations such as the International Bank for Reconstruction and Development. These sources of funds are limited, however, and their help must usually be in the form of loan capital with fixed interest rates and maturity dates, whereas many development projects are not suited to such financing. Equity capital is the most satisfactory form of financing for many types of economic development, and it must usually come from private sources. Much the same may be said of entre-

preneurship: technical assistance programs supported by more developed countries can be of great help, but really extensive development will undoubtedly require the intervention of private initiative on a substantial scale.

Despite extensive programs of development and technical assistance for backward areas, therefore, the problem of getting adequate private investment and initiative without paying an exorbitant price will undoubtedly continue to be serious. To assist in meeting this difficulty, it should be possible to organize an international agency to aid the governments of underdeveloped countries in negotiating with foreign business enterprises. It should be formed on a cooperative basis by the underdeveloped countries themselves, with associate membership open to such developed countries as wish to participate. Perhaps it ought preferably to be formed as a joint sub-agency of the United Nations and the International Bank, with participation by other specialized agencies, though alternative types of organization might also be considered. In any event, it would need a complement of technical employees with sound training and wide experience in the economic, financial, industrial, engineering, and agricultural problems of development—a staff such as all these countries need but few can afford individually. An important part of its work would be to pass upon (and, if necessary, to assist in negotiating) proposed contracts offering concessions to foreign companies for operations within underdeveloped member countries, to ensure that the terms were fair and reasonable. An equally important part of its work, however, would be to assist member countries in revising their commercial codes, tax laws, and administrative practices so as to attract capital by fair and consistent treatment, ensuring appropriate operating conditions and reasonable payment for services rendered. In too many countries today foreign business is hesitant about initiating development projects that are otherwise tempting, because past experience has led them to fear capricious tax or other measures if the project proves successful. That this attitude on the part of the governments concerned may be understandable in the light of previous sharp practices by some business concerns is beside the point; both foreign business and the underdeveloped countries are the losers.

This same international body, or some other, should make a study of how the various development programs of underdeveloped areas affect one another, with a view to sensible coordination. Any one country might find it expedient to develop, say, a textile industry; but if all start textile industries at the same time, they might on the one hand make it difficult for any of them to succeed in the face of competition from the others, and on the other hand so dislocate the export trade of this industry in older countries as to disorganize the world textile market, to the sorrow of their own newly established industries.

Another difficulty that has been mentioned is the smallness of the market in any one underdeveloped country, making it difficult to support a plant of optimum size. The revision of freight rates and foreign tariffs to remove the discrimination against the movement of manufactured goods from underdeveloped countries to world markets will be a long slow process at best, and may prove quite impracticable for the immediate future, but whatever can be done in this line should certainly be attempted. The difficulty might be over-

come or mitigated in some cases, however, by limited free-trade agreements among two or more particular underdeveloped countries, whereby each would establish specified industries and refrain from establishing others. Quite aside from existing trade agreements and conventions, which could perhaps be modified to accommodate the case, there would be many difficulties in carrying out this suggestion—questions of prestige and sovereignty, bargaining for favoured industries, and so on. Transportation costs between the countries concerned might be a serious problem also.[6] Nevertheless, this technique does offer some hope of expanding a market that would otherwise be uneconomically small.

Finally, a word may be said about the influence of political instability, which has been largely ignored in this article. Economic poverty and political instability go together, as is well known, and tend to be mutually exacerbating. The best prospect of breaking this vicious circle seems to lie in economic advancement, since this is where foreign help can be most easily and disinterestedly applied.

A. N. McLeod*

[6] Transportation is often a serious problem even within an underdeveloped country, especially if the territory is mountainous or contains large areas that are unproductive. The concentrations of population and wealth per mile are often insufficient to support an adequate system of roads or railroads.

* The author is an economist employed by the International Monetary Fund, whose work has taken him to a number of underdeveloped countries in a technical capacity. The opinions expressed in this article are, of course, only his personal views and do not necessarily represent those of the Fund.

Reply

My reply to Dr. McLeod will be confined to the first half of his article (Sections I and II) which are comments on my paper. Sections III and IV represent an independent contribution to the subject with some of which I agree and with some of which I disagree. Some of the arguments in Section III seem to me to be identical with my own, except in terminology.

1. *Definition.* Dr. McLeod is worried by the absence of a definition. I was talking about countries which are *poor* for reasons other than war destruction. These countries also happen to be mainly agricultural and exporters of primary products. An under-developed country is like a giraffe—difficult to describe but you know one when you see one. I saw and see no need for any other definition. I note that Dr. McLeod himself falls back "more on usage than pure logic"—so why bother? I did *not* mean "a country that is not at present industrialised." I do *not* consider Saskatchewan, Iowa, Denmark or New Zealand as "under-developed." All the under-developed countries are agricultural (or mining) countries, but not all agricultural (or mining) countries are under-developed.

2. *"Geographic" investment.* I do not have to show that merely geographic investment is "actually harmful to the recipient country." Foreign indebtedness is bad, even if the results of the investment are not "actually harmful." The *onus* is on someone to demonstrate that the investment is positively useful,

that it increases the national output by more than the amortization, interests and profits accruing. The harmful result is the indebtedness. It is brought about by the failure of real income to increase sufficiently to offset it.

The damage to domestic investment through diversion into specialized export industries was, as Dr. McLeod says, "pure speculation," and was put forward as such. Most of what he writes in his own contribution, as most of what anyone writes on underdeveloped countries, is "pure speculation." I would certainly class as "pure speculation" Dr. McLeod's statement in the very next sentence that "in the absence of evidence to the contrary we must assume that the most productive investments are made first." My judgment for underdeveloped countries would be different. We cannot tell what the "most productive" investments are until we have developed public services and external economies. Meanwhile, investments take place which do not require those nonexistent services and economies.

Dr. McLeod thinks I violated the principles of analysis of marginal returns to factors of production. I do not think I did. The "productivity of its labour and natural resources is increased as a result of the investment," as Dr. McLeod says. I did not deny it. Indeed, I produced definite statements and figures on an increase in productivity of primary production. But I did argue that the resulting gains in productivity were lost by worse terms of trade. The gains exist—but who got them? Where is the violation of marginal productivity?

3. *"Growing points."* I do not see why or how I could be expected to show that growing points are "improperly suppressed in under-developed countries." I do not believe in a conspiracy of hooded men in the industrialized countries against the under-developed countries. I am satisfied to note that these growing points are not there, and that particular types of export specializations do not provide them. I can agree with Dr. McLeod that "the present geographical distribution of growing points is by no means accidental" but that does not lead me to believe that the present distribution is providentially sanctified, or that it is necessarily the best for the world as a whole, nor that the provision of growing points is "largely outside the control" of under-developed countries. I note that Dr. McLeod himself, in explaining the present pattern, uses such terms as "historical sequences," "geographic distribution of incomes" (surely a circular argument!), and the catch-all of "other economic and social factors." I have been trying to describe such "historical sequences," such "economic and social factors." Development certainly is not a matter of willing it alone, but there are particular international arrangements under which an under-developed country *can* will economic development, and others under which it cannot. That was the point of my paper.

4. *Terms of Trade.* Different population trends may, of course, explain different standards of living, although it is not so much "increased population," as the wastage of a high death rate that I would quote. But this is itself a result of under-development—so it is largely a matter of where to begin the argument.[1]

[1] Perhaps I may explain that at the time of reading the paper to the American Economic Association, I was writing a separate article on "Demographic Factors in Economic Development." This may account for the omission of population from my paper.

Improvements in transport have improved productivity all-round—but have they affected the distribution of benefits and gains? Transport facilities are mainly owned by the more developed countries. Much of what Dr. McLeod writes about economic progress in transport, marketing and handling and the opening up to trade of settlements like Pinkie, Saskatchewan seems to me completely unrelated to terms of trade. Let us avoid the elementary confusion between the terms of trade and the volume of trade. In fact, the importance of that distinction, and other statistical points arising in the computation of terms of trade mentioned by Dr. McLeod, are clearly dealt with in the source[2] referred to in my paper.

When Dr. McLeod goes on to mention the "effects of progress and inventions"—new products and other betterments in the real income—as arguments against "the basic concept itself," he makes the concept collapse under a weight for which it was never designed. Improving terms of trade are compatible with a deteriorating standard of living, and *vice versa*. Terms of trade are one determinant of national income. They become important only where many of the other determinants are fairly constant. That, unfortunately, is often the case in underdeveloped countries. But I hope I have not confused the terms of trade with the national income. The footnote suggestion that the terms of trade may improve for both partners at the same time, seems to me to make nonsense of the terms.

5. *Technical progress*. I shall confine myself to saying that I have never "rejected" technological unemployment in industry. How could I? It was entirely outside my argument. If the more developed countries have chosen to throw away part of their gains by unemployment (or by emigration), that had nothing to do with the distribution of gains *from trade* (which was the sole subject of my paper).

6. *North America*. I cannot see that Dr. McLeod's explanation contradicts mine. Immigration could never have done the job, if the physical conditions had not been so favourable. But that is *always* true of finance. And my argument was that immigration, not investment, constituted the main source of "finance" for economic development. To say that population increase must

Dr. McLeod does, is to misunderstand the whole
ies foreign "finance" for economic development.
n does not.

H. W. SINGER*

and Imports of Under-developed Countries," United

e Secretariat of the United Nations. The present reply,
it arose, has been written entirely in a personal capacity,
e views of the United Nations organization.

Factor Demand with a Variable Quantity of Cooperating Factors[1]

The purpose of this note is to indicate a method of deriving a demand curve of an individual firm for a factor of production from marginal productivity analysis, on the assumption that the *prices* of the other factors of production are given, rather than their *amounts*. While the latter assumption permits the demand curve to be derived immediately from the total product curve of the variable factor, such a method is of limited usefulness. In any but the shortest-run period, the entrepreneur is generally in a position to vary his use

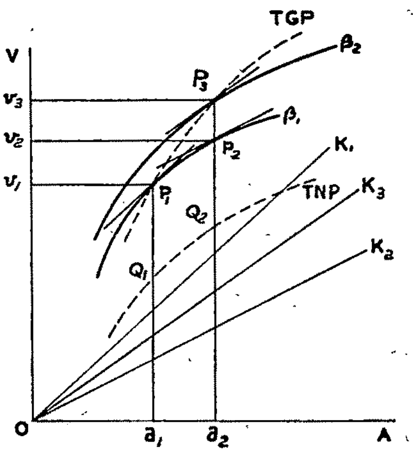

FIGURE 1

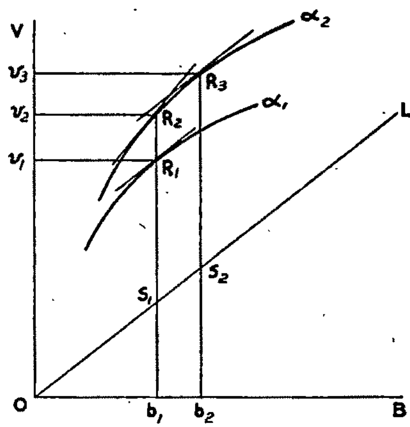

FIGURE 2

of some of the other factors, due to a change in the price of one factor;[2] in the "long run" he is presumably able to vary them all.

In the following analysis, it will be assumed for purposes of simplification that there is only one other factor (B), whose price is given for the firm.[3] Conditions of demand for the firm's output are ; total product curves that will be used show the v the firm. The slopes of the curves indicate margi ductivity; hence the analysis is applicable to imp competition in commodity markets.[4]

Let us assume an initial position of equilibriu

[1] The author expresses indebtedness to Professor W. M Illinois, and to Professor W. J. Fellner, of the Univer comments and suggestions.

[2] Assuming that the change is expected to continue : to make it worth his while.

[3] In the case of monopsony, it is only necessary to supply for factor B to the individual firm are given. Th by an increasing slope for the total outlay curve OL, straight line (its second derivative would be positive ra

[4] The other assumptions of marginal productivity anal maximization, variability of factor proportions, etc.

ducing an output v_1 (in value terms) and employing a_1 of factor A and b_1 of factor B, so that the price of B is equal to the marginal value productivity of B, the (demand) price for A is equal to its marginal value productivity, and the ratio of the marginal value products of A and B is equal to the ratio of their prices. This position is illustrated in Figures 1 and 2; in Figure 1, the slope of the total value product curve β_1 (which assumes a fixed amount b_1 of factor B) at P_1, is equal to the slope of the outlay curve OK_1 for factor A (the slope of the latter curve giving the price of factor A that is

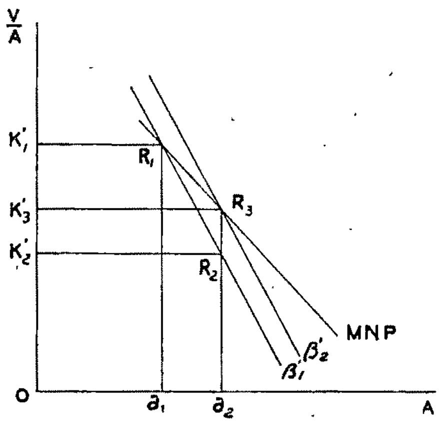

FIGURE 3

consistent with the employment of a_1 of factor A). Point R_1 in Figure 2 is to be interpreted in a similar fashion for factor B.[5]

Suppose, to obtain another price-quantity relation for factor A, that we increase the use of A by a small amount $\Delta a = a_2 - a_1$, and then determine the price for A which is compatible with the employment of a_2.[6] At first thought it might be supposed that we could merely move along the total product curve β_1 to P_2, the slope of the curve at that point (the marginal value productivity of A) indicating the price that could be paid for a_2 of A (shown also by the slope of OK_2). However, the increased use of A will result in an upward shift in the total product curve for B (Fig. 2, from α_1 to α_2); the quantity b_1 of B employed is no longer an equilibrium amount, since its marginal value productivity (along α_2) at R_2 is greater than its price. Consequently the firm will increase[7] its use of B from b_1 to b_2, where the marginal

[5] It should be kept in mind that the total outlay curve OL will not change in the course of the analysis, since the price of B is assumed given.

[6] Alternatively, we could consider a lower price for A and then determine the resulting increase in its employment. Although the latter may be the more customary procedure in deriving a demand curve, the former method is simpler for the present analysis. Both methods will, of course, give the same result.

[7] I am assuming here that factors A and B are "complementary"; *i.e.*, that the increased use of A raises the marginal value productivity of B. It is of course possible that the reverse will be true; in this case, less B would be used rather than more. *Cf.* J. R. Hicks, *Value and Capital*, 2nd ed. (Oxford, 1946), pp. 94-95. For a firm with a

value product of B is again equal to its price at R_3, output increasing further from v_2 to v_3.[8]

Since the use of B has now increased by $\Delta b = b_2 - b_1$, the value product curve for A will shift from β_1 to β_2. The marginal value productivity of A (the slope of the tangent at P_3) and hence the price compatible with the employment of a_2 of A (indicated by the slope of OK_3) after the amount of B has been adjusted "optimally," although normally less than it was at point P_1,[9] will be greater than it was at P_2, where the amount of B was considered fixed.

A whole series of such points as P_1 and P_3 can be traced out by varying A and determining, by the above method, the change in V after varying B "optimally." The locus of such points will define a total "gross" product curve for factor A (TGP in Fig. 1), from which marginal and average gross product curves can be derived by the usual methods.[10]

The total net product curve for factor A can then be obtained by subtracting from the gross product curve the cost of factor B; this is, of course, equal to the marginal product (price) of factor B times the amount of B. The total net product curve will therefore lie below the total gross product curve. Diagrammatically, for quantity a_1 of factor A (Fig. 1), $P_1\,Q_1$ is equal to $S_1\,b_1$ in Figure 2 (since b_1 is the optimum quantity of B to use when a_1 of A is employed) and $P_3\,Q_2$ is likewise equal to $S_2\,b_2$.

Furthermore, the slope of the total net product curve for any amount of A, say a_1, is equal to the slope of the total product curve for A after B has been adjusted "optimally" for that amount of A, to express the condition that the marginal net productivity of A must equal its marginal productivity.[11] In

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linear homogeneous production function and selling its output under conditions of perfect competition, the two factors must be complementary (*ibid*, p. 95); also Joan Robinson, *The Economics of Imperfect Competition* (London, 1933), pp. 258-59.

[8] It is possible to derive a whole series of such points as R_1 and R_3 by using different amounts of A and determining the optimum amount of B to employ in view of the latter's price. The curve traced out by the locus of such points in 3 dimensional space (A, B, and V) would, if projected onto the A, B plane, define a curve identical with Professor Boulding's "land curve" (assuming B to be land), "any point on it representing a quantity of land which it is most profitable to employ with a given quantity of labor." Kenneth E. Boulding, *Economic Analysis*, rev. ed. (New York, 1948), pp. 700-701. He applies this to the case of a change in the price of a factor (pp. 705-707), but does not indicate explicitly the relation between his "land" and "labor" curves, and the total value product curve for labor.

[9] Not always. The marginal gross productivity of A may increase for a certain interval in the employment of A.

[10] The terms "gross" and "net" are used here in Mrs. Robinson's sense. J. Robinson, *op. cit.*, pp. 239, 245.

[11] Let Δa be the increase in factor A, Δb the increase in B, and Δv the resulting increase in the value of output V. Then $\Delta v = \frac{\delta v}{\delta a}\Delta a + \frac{\delta v}{\delta b}\Delta b$, approximately.

The net product, after deducting the cost of B, denote by $\Delta v'$:

$$\Delta v' = \Delta v - \frac{\delta v}{\delta b}\Delta b,$$

terms of our diagrams, the slope of the net product curve at Q_2 (Fig. 1) is equal to the slope of the β_2 curve at P_3 where it intersects the gross product curve (Fig. 1); *i.e.*, is equal to the slope of OK_3.

The demand curve of factor A is then given by the derivative of the total net product curve.[12] This is illustrated in Figure 3, where the marginal net product curve is the demand curve for factor A. The β_1', β_2' curves correspond to the derivatives of the β_1, β_2 curves of Figure 1; $R_3\ a_2$ corresponds to the value of the slope of the product curve β_2 at P_3; $R_2\ a_2$, to the value of the slope of the product curve β_1 at P_2. The β_1' curve would therefore give the demand curve for factor A if the firm were not in a position to vary its use of B from b_1.

This method of obtaining a demand curve for a factor of production for a particular firm does not require the assumption that a fixed amount of all other factors be used, but merely that the prices of the other factors and the demand conditions for the product be given. It is, of course, entirely consistent with the treatment of certain factors as fixed, and others as variable, for varying time periods that might be relevant to a firm's decisions on factor employment or factor price determination.

EDWARD C. BUDD*

$$\Delta v' = \frac{\delta v}{\delta a}\Delta a,$$

$$\text{or } \frac{\Delta v'}{\Delta a} = \frac{\delta v}{\delta a} \text{ approximately.}$$

For an infinitesimally small increase in A and B, then

$$\frac{dv'}{da} = \frac{\delta v}{\delta a}$$

i.e., the marginal net productivity of A equals its marginal productivity.

[12] At least for all values of A which are equal to or greater than that value for A at which the average net product of A is at a maximum. If the price of A is higher than this, none of A will be employed.

* The author is assistant professor of economics at the University of Illinois.

European and American Economics

Three of my books have been most interestingly reviewed by Dr. J. Herbert Furth in the *American Economic Review*, September 1950, page 658-61. This review, however, goes beyond the limits of a review proper, setting forth, as it does, and criticizing the present-day level of political economy on the continent. This applies especially to Austria in the light of a comparison with the respective level of the economic sciences in the United States and the Anglo-American countries.

The article may certainly claim the merit of having broached the subject of existing divergencies and of having initiated a discussion which might prove fruitful. Even if not concurring in Dr. Furth's view, and self-complacency, which is—to forestall a misunderstanding—certainly not personal but strictly scientific, no efforts should be unavailing or hopeless which are

directed toward bridging the different viewpoints and promoting mutual understanding.

One thing stands out clearly from *Dr. Furth's* exposition, that the concepts and contents of the various fields of political economy have developed quite differently on the European continent and in Anglo-American literature, respectively. This is plainly disclosed in his review of my *Abriss der Finanzwissenschaft.* It fills him with wonder that such questions as the economic significance of government expenditure, governmental price and income policy, governmental "functional finance" are missing from a book on the theoretical science of finance. There can hardly be an economist on the European continent who would regard these questions as included in the province of theory of public finance, interesting though they may seem to him. Any European science of finance published in the last thirty years would, if consulted, reveal—and the author has expressly stated this in his preface—that the subject of expenditure economy of the government belongs to economic policy and not to theory of public finance. This is far from being a dogma and, certainly, the day will come when there will be some such science of financial economy as distinct from theory of public finance, uniting both.

The present efforts on the European continent, however, to arrive at a pure theory of government revenues economy should not be unavailing. Obviously, various alternative names could be found for it, but this is merely a matter of words. Besides, for instance, Europeans will have to get used to finding the term "sociology" to include or mean studies in the fields of economic policy and population policy. It is clear, for that matter, that it will probably be less easy to keep apart State revenue problems and State expenditure problems, that is, for instance, "functional finance" or financial methods for planning and controlling economy in general, in a totally socialized State. In this point I accede to Dr. Furth's reference to the Soviet Union. But it appears to have escaped his notice that the larger portion of my treatment of this country as well as the chapter concerned with questions of modern public finance deal with this question.

Similarly, in the review of *Geld von heute,* Dr. Furth thinks it undesirable for such questions as the Benelux Union, the sterling area and the International Monetary Fund to be missing from a theoretical inquiry. Here the wide gap becomes evident which separates, for the moment at least, the viewpoints in respect of the concept "theory." Doubtless it is an advantage and a merit of American and most of the Anglo-American political economists to give prominence to the practical applicability of theoretical knowledge. Carried to its extreme, this viewpoint would entail dropping pure theory and basic research work in favour of research work subservient to purpose. Even if it were admitted that some schools of economic theory have so far lost contact with the practical applicability of their theoretical achievements as to alienate interest in this field in wide circles and to an undesirable degree, it should not be overlooked that pure theory in the acceptance of this term as adopted in the old classical and new Austrian schools and as also evolved in continental countries other than Austria—*i.e.*, in Switzerland, Italy, Germany, Scandinavia—has achieved theoretical results which may be perhaps criticized

as too narrowly logical and philosophical, but can not be condemned as useless.

It may be noteworthy that within the sphere of the English-speaking countries there have been, of late, hardly any publications of methodological research and that, in the main body of American literature, the problem of approach is interpreted to mean simply whether the "verbal" or the "mathematical" method can possibly be applied. I was deeply impressed, when in academic discussion I mentioned *Schopenhauer* in connection with the problem of introspection, a full professor of a first-class American University replied: "I never heard of him; I am an economist!," while another solemnly declared, "The problem of imputation does not exist!" Whether this attitude is favourable to maintenance of touch with other sciences or to the universality of science is certainly very doubtful. Nor would I dare to give an affirmative answer to the question whether intensified application and intricate refinement of admirable research work, intensified application of mathematical representation and an almost disproportionately high intensification of the business cycles complex could be regarded to be a full substitute for pure theory and pure basic research. It is anything but mere chance that there is no counterpart in American monetary research work to the concept of pure monetary theory as found in the works of such men as Knapp, Mises, Wieser, Moll, Elster and of many Frenchmen and Italians. If this continental method were stamped as too abstract, deductive, and prone to classification, it may as well be held that in a considerable part of American literature—Irving Fisher is a pertinent instance—those who entered the field of applied theory, nay, monetary policy, did so, perhaps partly prematurely and neglecting basic research.

Yet another factor especially stressed by the reviewer of the *Handelspolitik,* but with some definite bearing on *Das Geld von heute,* too, is that Europeans have been reproached—and rightly so—with having been cut off from Anglo-American standard publications since 1933 (in Austria since 1938!). Legitimate though this reproach may be, an explanation can be furnished. As late as from 1947 onwards Anglo-American literature found, to some extent, its way to Europe again and became known to wider circles. Besides, value judgments are not the same. Only very few will be ready to acknowledge *Keynes* as, so to speak, "Ricardo's grandfather." This may be due to the fact that his sources, Marx and Rodbertus in particular, are better known and have been studied more thoroughly in their original language in this country. Though the highly interesting nature of his ideas meets with full appreciation here, opinions vary as to how far they originated with him. It would be further justified to state, by way of contrast, that—if purely for linguistic reasons—much of the most important European literature and pertinent names are entirely unknown in the States. No one I met seemed to have heard about *Dobretsberger, Lucas* or *Moll.* The same is true in the theory of public finance where, for instance, the leading Italian scientists, say *Morselli* and *Pietranera,* are unknown and the Germans, say *Jessen* or *Ritschel,* are nearly so. This list is capable of extending in all special fields and in nearly all European languages.

This is not meant to be censure. It is imperative to insist upon the pro-

motion of mutual exchange and to spread it over some considerable length of time. It is likewise absolutely necessary to translate European literature into English and thus make it available. Many American economists, unfortunately, are unaware of the latest and most important French publications in the field of monetary theory not to mention the relevant German, Italian and Spanish literatures or even Yugoslavian, Hungarian or Czechoslovakian. Cooperation, therefore, would hold out hope of great and satisfactory successes with "Give and Take" evenly shared. On the part of European economists such cooperation would be accompanied by the warmest feelings of thankfulness for all material and technical assistance, such as they have had from their American friends since 1945. Assertion of the old Hungarian dictum, *Extra Hungarian non est vita et si est vita, non est vita* (There is no life besides Hungarian life and if there would be life—it could not be real life) would certainly detract from the spirit of team work. The above motto would not be accepted by Europeans in their honest efforts for comprehensive cooperation. Only by means of *mutual* intensive and extensive exchange, my dear friend Furth, Central European *and* American economic science will regain the place of honour representing our joint aim.

RICHARD KERSCHAGL*

* The author is professor and head of the department of economics and financial science of Vienna University of Commerce.

Divergent Views of Members of the Subcommittee on Teaching The Elementary Course in Economics

Editor's Note: After this report had reached the printer, some members of the Subcommittee wished to modify certain of its statements, to expand certain of its arguments, and to shift certain of its emphasis. These matters are set forth in the following communication.

The final draft of the report of the Subcommittee on the Teaching of the Elementary Course in Economics, published as a part of the general report of the Committee on the Teaching of Economics and the Training of Economists, was written by the chairman, William W. Hewett, and circulated in early June, 1950 among the subcommittee members for criticism and correction. A copy was sent at the same time to Professor Horace Taylor, chairman of the parent committee. During the summer three members of the subcommittee responded with comments on the report, the last communication reaching my desk late in September. The excellence of these comments demanded a revision of the preliminary draft of the report and I wrote Professor Taylor for more time to prepare such a revision. Unfortunately, a series of misunderstandings, for which I assume full responsibility, had given Professor Taylor the impression that the report in his hands was to be considered the final draft and was already in press. Since it was too late to correct this unhappy situation by the submission of a revised report, it was decided that a communication be written for publication in the *American Economic Review*, clarifying the divergent views of the subcommittee mem-

bers. A note to that effect was inserted at the end of the report when publication reached the page proof stage. This communication is the result and I hope that it will also serve as my apology to the subcommittee membership. In the paragraphs that follow no attempt has been made to include a rebuttal of the points raised by individual member comments. I have sought to summarize the more significant opinions just as they were expressed by the three individuals concerned: Professor Mary Jean Bowman, Professor Bruce W. Knight, and Professor Shorey Peterson.

1. *Content of the Elementary Course.* The published report of the subcommittee was extremely critical of the expansion in the content of the elementary course in economics, "beyond all possibility of adequate comprehension and assimilation by a student in one year of three class hours a week"; current courses "persist in crowding into one course, content necessary for a diversity of objectives."

Professor Shorey Peterson expressed strong doubts that this was a common fault. He argues that several apparently alternative objectives may be perfectly consistent with each other. While agreeing that a course may properly make training in principles the proximate goal, he believes that few teachers would view this training as an intellectual exercise, or accept the understanding of theory as the final objective. Rather, they would agree with a statement contained in the report, that "economics is intended to equip him [the student] with a technique for grappling with current economic problems." This, in Professor Peterson's opinion, is all that many teachers mean when they say that training for citizenship is a major goal, or suggest other related broad objectives. True, the skillful teacher can put "the breath of life" into abstract principles, but the job of transferring knowledge of theory to problems must not be left to the student; it must be made a part of his instruction. A considerable degree of skill is required to avoid the danger of diffused instruction, but the problem is one of integrating the complementary elements of a complex but still reasonably manageable task.

Professor Mary Jean Bowman is in substantial agreement with Professor Peterson. She adds that it is more *over-ambition* than *indecision* that is responsible for undue expansion of the elementary course. For example, the objectives of providing insight into public policy issues and the teaching of a theory course, are entirely compatible and may be mutually supporting if ambition in any one direction is curbed within reasonable limits.

Professor Bruce W. Knight agrees with the report that the primary criticism of current elementary courses is the failure to limit coverage. However, he would emphasize the importance of teaching *thoroughly* the more limited content that is selected.

2. *The National Income Approach.* In order to obtain a cross-section of current practices with respect to the use of national income material and the aggregate demand—full employment area of economic theory, a special questionnaire was prepared and circulated. This questionnaire requested information on the "National Income Approach" and sought to clarify terminology by a subdivision of the "National Income Approach" in the elementary course;

into two categories: (1) national income accounting which referred to a study of the size, variation, major components etc., of the gross national product; and (2) aggregate demand—full employment theory.

Professor Peterson objected to the implications of the word *approach,* holding that the term may be quite satisfactory in characterizing a course oriented along the lines of Professor Samuelson's text, but quite misleading for many other courses which none-the-less include considerable national income material. "Most teachers recognize as important *topics* (1) the measurement of economic achievement as accomplished through understanding national-income data and concepts and (2) the nature of aggregate demand and the determinants of employment (through various combinations of Say's Law, Keynesian, and conventional business-cycle elements); but to include these topics is not to adopt an "approach" except in a sense that is equally applicable to other major aspects of economic organization and processes that a course is likely to include. The word, I think, works against a desirable perspective."

Professor Bowman believes the report should have separated more sharply the National Income Approach, from the Income-Employment Approach. In her view, the report reads as if the second-type course were merely an extension of the first, whereas the two are quite different in emphasis. She is also reluctant to accept the exclusive credit given Lord Keynes as the inspiration for the National Income Approach, since a number of men who emphasize that sort of thinking take their departure from the Swedes and D. H. Robertson rather than Keynes—and on the whole are anti-Keynesian.

Professor Knight found no fault with the implication of terms, but thought that our report should point out that the only necessary and underlying conflict between the "National Income Approach" and the "Traditional Approach" is the conflict between competing uses of time and energy—hence a matter of allocation and opportunity costs. "If we are trying to teach principles, surely it is nonsense to say—that we should pound at allocation when we have full employment and at full employment at other times. For almost any policy is likely to have effects on both the total volume and the allocation of employment (of all agents of production), and it is even more important to have the right allocation when the total is low than when it is high. For that matter, I think 'full employment' is itself a matter of allocation —between economic and non-economic uses of resources. All this is only 'in principle,' however. 'In practice,' unfortunately, I find that the younger enthusiasts for the N. I. A. neglect allocation, underemphasize the limitations of compensatory spending, and at least invite, if they do not openly espouse, bigger and bigger doses of social control."

3. *Suggested Alternative Course Plans.* The published report suggested as a basis for discussion, three alternative courses that appeared to possess unity of objective and reasonable content. The suggested courses were: (1) A study of the Economy as a Whole; (2) Contemporary Economic Issues and Economic Policy; (3) an Introduction to Economic Theory.

Professor Bowman believes that the first alternative (the Economy as a Whole) gives an appearance of an unhappy mixture of diverse topics. She

argues that any good course, even one emphasizing micro-economics primarily, must also give a picture of the economic process as a whole; there is no special reason why a National Income Approach should be especially associated with a comparative study of economies, planned or otherwise, as was suggested in the report. Professor Bowman would prefer to call this type of introductory course *Comparative Economics*. It would then give the instructor an opportunity to focus attention on the development of broader social and economic perspectives as the primary course objective. She suggests that such a course might also meet the needs of many institutionally minded economists as well as many who desire to emphasize public policy. The course would also provide a wonderful opportunity for those who are interested in our economic relations with the rest of the world as a topic of major importance.

Many other diverse comments were made by the subcommittee membership. Professor Knight would like to see the older hands teach the elementary course, take that teaching more seriously, and inspire the younger members of the staff with seriousness about teaching. He is also quite skeptical concerning the substitution of broad orientation in the social sciences for an undiluted course in general economics. Professor Bowman agrees that there is much to be gained by both neophyte and veteran participation in the elementary course; the interchange of ideas in frequent staff conferences can serve to raise the level of teaching and give the first course a place in the scale of professional values that is all too often lacking. She also feels that the report might have been a bit more modest about the place of economics in the college curriculum!

Time and space limitations make it impossible to cover all such interesting and relevant comments. I can only hope that this communication will serve to correct in part the unfortunate failure to make our subcommittee report more closely in line with the collective views of the membership.

William W. Hewett

University of Cincinnati

BOOK REVIEWS

Economic Theory; General Economics

Friedrich List. By CARL BRINKMANN. (Berlin and München: Duncker und Humblot. 1949. Pp. 359. DM. 16.)

During the last few decades, interest in the work of Friedrich List has become so pronounced as to amount to a List-renaissance. While it would lead too far to fully explain the reasons for the revival of interest, there is no doubt that it should be partly credited to those economists who, in 1925, sponsored the *List Gesellschaft* which in its turn organized the ten-volume edition (Berlin, 1927-1935) of this ingenious writer and unscrupulous propagandist and promoter. This monumental collection has offered a new opportunity to study many details of List's life and of the evolution of his ideas. Still there remained the question whether the wealth of unearthed material would confirm or alter the conventional opinion of List's contribution to modern economic thought.

For fifteen years we have been waiting for a reappraisal of this kind—a reappraisal that, of course, required some congeniality with the great opponent of the classicists and the same rare combination of theoretical and historical and of economic and political interests which established his rank among the outstanding "system-builders." Apparently, Professor Carl Brinkmann hoped to accomplish this mission when, to his many historical and theoretical studies, he recently added a biography of List.

Although the book, based on a meticulous study of a vast correspondence and the numerous articles, diaries and pamphlets now made available to us, satisfies the technical requirements of a good biography, it will disappoint those who expect new insights into List's system and a clarification of the inconsistencies and contradictions in his principles and programs. His opportunistic attitude has been reaffirmed beyond any doubt. When Brinkmann embarks on a reinterpretation of the fundamental ideas of his hero, he exposes himself to criticism.

The uniqueness of List's work rests on the crossfertilization of two streams of thought, the German romantic concepts and the ideas of technical and industrial progress mainly derived from his American experience. He was logical in opposing any compartmentalization in the social sciences and in considering economic objectives as subservient to a political program primarily based on might and power. As List emphatically stated, national might is more important than wealth because it includes the power of opening new productive resources and "because these productive powers are the tree on which all sorts of wealth grows and because the tree which bears fruits has more value than the fruit itself" (*Das Nationale System der Politischen Ökonomie* in *Werke,* Vol. VI [1930], pp. 99-100). An appeal to force, therefore, was a

legitimate element in his argument. He was not afraid to recommend restri tions and retortions in order to force the European countries into a syste of international free trade (see, for instance, his plan of 1820, p. 85). Gaëtan Pirou aptly said, List's originality appears less in his protectioni proposals than in his basic views, particularly on the subordination of ec nomic measures to political and national objectives.[1]

Apparently, Brinkmann does not fully approve of this interpretation. Th best parts of his book are the comparative analyses of three documents whic indicate three characteristic stages in List's scientific development: the Englis *Outlines of American Political Economy* (1827), the French prize-essay *L Système Naturel d'Économie Politique* (1837), and the German masterpie *Das Nationale System der Politischen Ökonomie* (1840). Yet Brinkman believes that the *Outlines* which contains the germ of his later "systems" wa a fruit of List's American experience. Notions derived from the "atmosphere of the "American system," as established by Alexander Hamilton, prevaile over "any knowledge imported from Europe" (p. 140). The weakness of a interpretation of List which minimizes the impact of romantic ideas is obviou His notion of "productive powers" was so nebulous that it could hardly fin any place except in a romantic system of economics. Or, to give another in stance, his dichotomy of the capital of mind and the capital of nature was n more than an imitation of Adam Müller's well-known distinction betwee physical and spiritual capital.

The reader will be impressed by the author's erudition and the thorough ness of the historical documentation. Yet he will scarcely characterize the boo as pleasant reading. Too often both narrative and analysis are overloaded wit parochial data and irrelevant details more appropriate to the biography of local politician than that of a founder of a new system of economics. The boo suffers also from deficiencies in presentation and from an involved and clums style. In plowing through its pages, the reader may wonder whether a greate investment in editing would not have secured increasing returns.

FRITZ KARL MANN

The American University,
Washington D.C.

Employment and Equilibrium. Second (rev.) ed. By A. C. PIGOU. (London Macmillan. 1949. Pp. x, 283. $4.00.)

The only thing better than a book by Professor Pigou is its next editior Except for the *Economics of Welfare* (and its numerous offspring), *Emplo ment and Equilibrium* is Pigou's most important book. Written after he ha held Marshall's Cambridge chair for one-third of a century, it refutes th contention of those who regard economic theory as a young man's game.

The new edition is slightly longer, but the changes are few. The principa ones grow out of criticisms in the 1944 *Economic Journal* by S. C. Tsiang an

[1] Preface to Maurice Bouvier-Ajam, *Frédéric List—Sa Vie, son Oeuvre, son Influen* (Paris, 1938), p. x.

relate to the formal "stability properties" of Pigou's system. Thus, Pigou had argued that, with income constant, the saving schedule in response to interest changes must cut the corresponding investment schedule from below: otherwise the system would be dynamically unstable, with an upward movement of the interest rate becoming self-aggravating as scheduled investment continuously exceeds scheduled saving. Tsiang, following Hicks' distinction between "perfect" and "imperfect" stability, pointed out that the resulting employment changes could conceivably restore the equilibrium so that the Pigou condition is not necessary for stability. In the new edition Pigou agrees (p. 75). He, therefore, rests his case (p. 83) on the empirical proposition that the response of saving to interest is small and is, if anything, probably of positive rather than negative elasticity.[1]

Tsiang's second objection is even more technical. Pigou had thought that even under imperfect competition, an expansion in employment in the investment and consumption-goods industries *must* be accompanied by a fall in real wages, or else the system would be (1) dynamically unstable and (2) the entrepreneurs would not be maximizing their profits. It is clear that the latter argument involved the fallacy of composition. Also, the former argument appears to be too strict a requirement. So in the end Pigou has to get his same result by appealing to the familiar empirical constancy (alleged to hold over long periods of time) of the income shares of wages and non-wages. The general reader will find this new discussion hard going; the specialist will wish that a ten-page Appendix had been added specifying exactly what dynamic and statical assumptions are being made.

For more general reactions to the book, the reader must be referred to my earlier extended remarks.[2] Neither these nor similar criticisms by Kaldor (*Economic Journal*, 1941) have persuaded Pigou of his error in refusing to make investment demand—as of a given stock of capital!—depend on current employment as well as on the interest rate. The result is an incorrect banishment of the paradox of thrift (pp. 56, 160).

One last curiosity should be mentioned. Pigou has failed anywhere to introduce into his short-run analysis what is today called the "Pigou-effect," *i.e.*, the upward effect on consumption of an increased real value of money and government bonds induced by a decline of the price level.[3] As a result of this ultra-Keynesian lapse, Pigou must champion the classical system with one hand tied behind him. Fair odds if you have his punch and the interest elasticities are propitious.

PAUL A. SAMUELSON

Massachusetts Institute of Technology

[1] Pigou's dynamic assumptions remain implicit and ambiguous; but using his own type of logic, he might have deduced this condition by *postulating* that the system is "stable" *even* if (1) the liquidity-preference or income-velocity schedule is interest-inelastic; or (2) if wages move so as to keep employment always full.

[2] *American Economic Review*, Vol. XXI (Sept., 1941), pp. 545-52.

[3] In my earlier review, I failed to note its presence in his long-run analysis at the end of Part II.

The Social Costs of Private Enterprise. By K. William Kapp. (Cambridge: Harvard University Press. 1950. Pp. xii, 287. $4.50.)

What is cost? This is Pilate's question to the economist. If a clearcut and thoroughly defensible answer could be given to it, economics might at long last rest upon a philosophically sound foundation. But like "right and wrong" to Underschaft's son Andrew, it has become the custom to proceed as though everyone knew as a matter of course what "cost" is, or else to pass over the subject with a gesture of impatience or an angry silence. Yet for the economist it is clearly at the center of all doubts, all questioning, all controversy, all the conflicting theories of production, distribution and value, all the catallactics of price determination and capital formation—and not, to skip the least of these in the burning issues of contemporary price control policy, of all the problems of inflation, defense mobilization and full employment.

Professor Kapp, accordingly, in questioning received opinion along this line, is not, as he freely acknowledges, raising new, but very old questions. There is no discredit in this. Quite the contrary. In fact, in the face of the run of articles as they appear in this and similar journals of learned opinion where continued silence on the underlying issues is approaching the scandalous, it is an act of singular courage. Not to raise the question at the beginning of all fundamental problems in economics is as though the philosopher, unable to define "truth" so as to meet all doubts, were accordingly to consign it to Limbo. By so doing he would, of course, also doom philosophy to the rôle of patron of Credulity or the champion of Apologetics—or both. Yet this is substantially what has happened to "cost" in economic literature where it has simply become an expense that is incurred on the books of the entrepreneur under circumstances where he may not readily, in the short run at least, avoid the outlay. On current showing—I have seen no vigorous protest to the contrary—it may even include taxes of any sort, not to mention advertising, lobbying for laws to eliminate competition, etc., as well as any and all unearned income. A quarter of a century ago an economist in a position to know referred to his kind as singers of "the canticles of commerce" or the "troubadors of trade."

The result, as Kapp points out in great detail, is that business practice builds into the economic terrain wastes and extravagances world without end. And no economist can say him nay. Consider the semantic item, *efficiency*. It has now become a measurable differential in prices of comparable goods and services when related to some monetary total called "investment"—irrespective of how any of these commensurable but always shifty-eyed children of the balance sheet come into this uncertain world. Of all the jejune ideas that have muscled into the painful discourse of economics, surely that of the "marginal efficiency of capital" has struck a new low. No folly, no waste, no rendering to the just or the unjust, no crisis, no debacle up to and including the ruination of the country's natural resources, or pitching the nation into war, or even the total erosion of competition—not to mention impact of business practices upon democracy or constitutional government—can be caught in the net, or weighed and appraised by the "tools" of this cock-sure calculus by way of which the professional economist gives unsought-

for advice to those who do not need it, the entrepreneurs. Thus, the seeming clarification of price theory has tended to introduce into the language of economic speculation a pretentious but desiccated mumbo-jumbo of unimportant maxims which it may masquerade as profound only to those not able to see through the pale caste of elementary mathematics with which it is sicklied over. We are left with a monument of babble to social science Ignoramibus. Davenport, who pioneered in this by-passing of important issues, used frankly to say that it was evasion and could not, of course, go beyond essentially bookkeeping problems. And, of course, there can no more be a science of bookkeeping than there can be a science of etiquette.

Furthermore, as Kapp points out, it is a special type of bookkeeping. It has to do solely with monetary gains to the individual entrepreneur. Kapp details the cost of this calculus to the community and to society at great length wherever (as in air pollution, wastage of natural resources, bad distribution of goods, etc.) the data permit some degree of measurement. But what is the way out of this *reductio ad absurdum* in the current handling of economic problems? There would seem to be at least two desiderata. First, policy determines the parameters of cost as clearly as cost is a starting point for the determination of price. And second, there must be something of a model of what constitutes efficient use of economic resources which are *necessarily incurred* when the appropriate engineering is organized along scientific lines—technological and behavioristic.

Now on both these points Kapp's argument falls short. The first by being considered only briefly in connection with "overhead costs" (pp. 163-68); the second by having no frame of reference. What, to begin with, is "cost" anyway? Is it any disadvantage suffered by any person from any other's action—with the caveat that the action must be "economic" and the initiative "private"? (Chap. 1) Is it any loss of production? (see pp. 168, 169) Is it any "waste," preventable or not under private enterprise? (see Chap. 11) Is it anything the community might have had at all under any conditions but does not now have by any man's carelessness or neglect? (see Chap. 15 on the Frustration of Science) In general what Kapp calls "social costs" seems to be identical with "wastes of competition" (p. 182), but in the chapter on monopoly it seems to be wastes of monopoly instead.

There are many further instances of slipshod writing. What, for example, is one to say of the idea that "nonrational behavior was assumed" by the early classical writers "to be either nonexistent or at least of no importance" in the then existent equilibrium analysis? What of Ricardo and Malthus on the population issue? of Smith on the conspirators of the market place? of even the later Walras on land nationalization?—not, of course, to mention Hume's corrosive skepticism on the possibility of a causative nexus in rational thought at all? But against the scale of importance in the central problem posed, such flaws are unimportant. If nothing else happened than that professional economists should read and understand the full implications of the proposition laid down on page 243, that economic theory as taught has become one of those methods "of limited understanding" which "is at length exhausted," and that, consequently, instead of its continuing to be as it was in its youth, "a triumphant success" it is now, as Whitehead might put it,

"an obstructive nuisance," the book will be well worth while. The implication drawn on the next page, that "economic science must . . . return to philosophy" should cause the editorial offices of the textbook factories to seethe—particularly in their cash registers. For it would destroy most of what is written these days, textbooks and articles alike. But where are philosophically minded economists being turned out? And what graduate school will risk trying something a little different?

ROBERT A. BRADY

University of California

Introduction to Economics. By THEODORE MORGAN. (New York: Prentice-Hall. 1950. Pp. xxix, 857. $5.00.)

This is a well written, well organized, up-to-date text, with numerous footnote references valuable to non-specialists. Exposition combines "theoretical" and "institutional" approaches. In the main the author succeeds in his announced intention "to tie theory and statistical and verbal description closely and equally together." His greatest interest is in "Income and Employment" (Part III), which, together with the earlier and related chapters on money, constitutes approximately forty per cent of the book. Teachers more interested in neo-classical analysis may, however, be appeased by the 250 pages on "Value and Distribution" preceding income analysis.

Professor Morgan's earlier text, *Income and Employment*, has been reprinted, almost in entirety, as Part III of the present book. The most important changes appear to be addition of a chapter on income fluctuations and fifteen pages on postwar inflation, shortening of the already quite brief discussion of labor mobility and industrial location, and modernizing of analysis, statistical material, and footnote references. The general impression continues to be one of that modified Keynesianism which may be termed the new orthodoxy.

Part II, "Value and Distribution," displays a modified neo-classicism. Among the more noteworthy deviations from the usual text organization and content are introduction of demand and price theory with consideration of highly "imperfect" markets, minimization of marginal-utility analysis, a more institutional discussion of oligopoly, and inclusion of taxation within the section on distribution. The allotting of separate chapters to "Wages," "Rents," "Interest Rates," and "Profits" shows a familiar pattern of organization, but the problems discussed and the conclusions reached often differ significantly from those found in standard texts of earlier years. In his brief discussion of the marginalism controversy, Morgan reveals little sympathy for heretical views, but in his later analysis of resource prices he at times departs appreciably from strict orthodoxy (*e.g.*, pp. 336-37, 341).

In many places the author makes specific policy recommendations and gives definite answers to non-policy questions widely considered controversial. This does not, however, create an impression of special pleading or of vested academic interest. Explanation is perhaps found on page viii of the "Preface to the Instructor": "I hope that these chapters will be taken as a target for questions and doubts and as a stimulus to further inquiry."

My principal doubts about the usefulness of the text concern the extent

of coverage and level of analysis, especially the former. Comparison of Morgan's topics with those of, say, Taussig's 1921 volume, points up a conclusion reached by the Subcommittee on Elementary Courses in Economics, ". . . the content of the elementary course has expanded beyond all possibility of adequate comprehension and assimilation by a student in one year of three class hours a week" (*American Economic Review,* Supplement, December, 1950, p. 56). I chose Taussig for comparison because his was one of the longer, more comprehensive, and more difficult (also better written) texts of an earlier generation. Although the 1921 text is substantially longer than the 1950 one, its greater length is attributable to more prolonged discussion of questions. The recent book introduces more major topics, goes farther in the direction of acquainting first-year students with all areas of current economic thought. Morgan is certainly not the only text writer guilty of overambitious coverage, nor is his sin in this respect as great as that of some of his brethren. But the forgiveness which the Subcommittee offers (*ibid.,* p. 57) is generous in all these cases.

A workable compromise can perhaps be reached if the teacher carefully studies the book in advance and eliminates large parts of it from the course schedule. If this is done, the objection concerning level of analysis will also in part be met. Students can reasonably be expected to attack more difficult subject matter if they are given a longer period for effort and absorption. But even this solution may be feasible only if the teaching is expert or if students are well above average in intelligence or experince. The level of understanding required for the general average of Morgan's chapters is pretty high.

HENRY M. OLIVER, JR.

Indiana University

Current Economic Problems. By HENRY WILLIAM SPIEGEL. (Philadelphia: Blakiston. 1949. Pp. 726. $5.00.)

Professor Spiegel admits that he has written his book with a three-fold purpose. The first is to supply tools of analysis for correct thinking; second, to chart the course over which citizens and economists must travel if they are to understand the age in which they live; and third, to make some contribution toward enlightened citizenship at the present time. The viewpoint is largely Keynesian. As stated in the preface, "The treatment is strictly modern, utilizing to the fullest possible extent the national-income approach and the framework of macroeconomics." Thus he deals almost wholly with such things as aggregates, national income, full-employment, etc. Little or no attention is given to cost-price economics of the individual firm or so-called atomistic competition.

The author does not attempt to deal with all economic problems, but in the introductory chapter, addresses himself to "The Great Problems of the Age: Progress, Security, Freedom, and Peace." The book is then divided into four major parts, devoted to these fields. In connection with "Roads to Economic Progress," he deals with (1) population problems, (2) technological

progress and capital formation, and (3) problems of economic prediction and measurement. The population chapter shows careful study of birth and death rates in various countries, population movements, and the effects of population changes on economic problems. In the chapter on Technological Progress and Capital Formation, he follows the strict Keynesian line by pointing out how J. B. Say's Law of Markets and laissez-faire had failed to yield full employment in the presence of technological progress with the result that the state had been forced to concern itself with problems of saving and investment, securities regulations, and other types of government intervention.

After observing how progress had created extreme dynamics with cycles of prosperity, depression and unemployment, and a maldistribution of income, he shows how modern man has come to concern himself with the quest for security. In this section we find elaborate treatment of governmental attempts at stabilization of prices, stabilization of employment, rights of organized labor, justice in distribution, social security, home ownership, and investments.

Recognizing that government intervention in behalf of security automatically results in limitation of liberty and freedom, he then inserts a section on the "Balance of Freedom and Order." It is in this section that we find an extended treatment of free enterprise and the rôle required by government to make the free-enterprise system operate to the benefit of all.

The section on Peace is relatively brief, containing two chapters, one on problems of international trade and the other, on problems of international finance. The book closes with a treatment of three special problems, (1) the prospects of agriculture, (2) special problems of the South, and (3) special problems of the West.

Since the author champions a rather comprehensive rôle by government with frequent references to Congressional acts, he has placed in an appendix the complete text of nine major Acts of Congress, among them being the Sherman Act, the Clayton Act, the Webb-Pomerene Act, the Miller-Tydings Act, the Robinson-Patman Act, and the Taft-Hartley Act.

The book is well documented, has an excellent index, and should prove to be a very valuable reference work in the fields covered. It is difficult to evaluate its worth as a textbook. It appears to be too advanced for sophomores, where a first semester is given to Principles, followed by a second course on Problems. It would probably work best as an advanced course at the undergraduate level, dealing with contemporary economic problems.

As indicated above, in economic philosophy, the author is quite definitely Keynesian. Those who still feel that micro-economics should not be neglected, that unregulated prices still have work to do, that functional distribution is still a basic part of economics, will not be attracted to this book. Upon public finance, he adheres pretty definitely to the "new philosophy of public debt" which is largely burdenless since "We owe it to ourselves."

In political philosophy, the author is quite definitely of the New Deal variety as the rôle of government needed for the solution of the four great problems analyzed is very great.

H. L. McCracken

Louisiana State University

Economics. By Shorey Peterson. (New York: Henry Holt and Company. 1949. Pp. 919. $4.60.)

This book is intended for use in the general Principles of Economics course in the liberal arts college. As Professor Peterson points out in the preface, such courses, and the textbooks designed for them, attempt to serve a dual purpose: that of giving a fairly complete and well-rounded course for the large proportion of the students who are unlikely to take much further work in economics, and at the same time supplying the basic information and analytical training necessary to those students who will take substantial majors in the field. One of the main divisions of emphasis, as between those who emphasize the first or the second objectives, lies between those who emphasize problems (and particularly public policy problems) and introduce only the minimum of analysis necessary to discuss the problems meaningfully and those who emphasize the analytical techniques and discuss problems and policy as examples of applied technique.

This reviewer has the impression that many responsible for such courses are not too happy about their own particular compromise on this question, and that few think that the compromise adopted by others or by text writers is right for their particular course.

This text, in the opinion of this reviewer, leans somewhat more in the direction of de-emphasizing formal analysis than some of the other widely used texts but not with any substantial loss either in clarity in presentation of the essential analytical points involved in the problems discussed, or in coverage of the most important analytical tools and methods of general applicability. It should, therefore, appeal to many as a workable compromise.

The book is well organized. It begins with two parts containing nine chapters which introduce the student to the functions performed by an economic system and to a description of the main features of our essentially free capitalistic system and of the organization of its production by firms and markets. The next two sections discuss the monetary system and the problem of variations in total employment. Part Five discusses the rôle and operation of the price system with emphasis on firm and market behavior and the problems raised by the existence of monopoly power in a free system. Part Six discusses distribution, both descriptively and analytically, and the various means and attempts to modify the inequalities of income distribution. Part Seven takes up briefly the areas of government operations in the economy, international trade, and a comparison of capitalism and collectivism.

The text, although long, is complete in itself, and shows every evidence of being the result of a long period of testing and trial as to the best way to interest the student and lead him through the difficult process of thinking logically about economic problems.

Some minor points in the text raised questions in the reviewer's mind. In discussing ruthless depletion of our forests (p. 103), the figures given would show that the ultimate exhaustion will arrive in the year 12,000 A.D., or a very long run. It is stated, without proof, that markets are too shortsighted and that only government can take the long view (p. 106-7). The statement is made that "cost accountants can assign [joint] costs reasonably well for

long-run adjustments" (p. 514). This statement is clearly wrong if "reasonably" is to be interpreted as "meaningfully." A statement on page 565 implies that the characteristic of restriction of a firm to a market covered by its own physical facilities is the characteristic that is inherent in public utilities. The implication of over-capacity in monopolistic situations is put somewhat too strongly (p. 576). Large firms are said to be able to maintain higher prices in some markets to carry the costs of predatory price-cutting in others (p. 589) But why are they not already charging the most profitable prices in these markets even if not engaged in price-cutting elsewhere? Farm cooperatives are said to be exempt from anti-trust laws *if they do not raise prices to unreasonable levels* (p. 601). The discussion of rate base (p. 612) is somewhat dated by postwar federal decisions. Value of marginal product is identified as marginal value product (p. 683). This is true only under competition. Somewhat too strong a case is made against the marginal method (p. 685). If data cannot be estimated to enable its use what alternative basis of decision is used? One important analytical omission is the lack of discussion of the connection between long-run firm and industry costs and industry supply curves

These critical comments should not be weighed too heavily, however, in view of the general excellence and completeness of the book.

FRANCIS M. BODDY

University of Minnesota

The Economics of Illusion: A Critical Analysis of Contemporary Economic Theory and Policy. By L. ALBERT HAHN. (New York: New York Institute of Finance, distributor for Squier Publishing Co. 1949. Pp. viii, 273 $4.00.)

This is a collection of Dr. Hahn's essays, most of which appeared in either professional journals or business periodicals between 1943 and 1948. The title has at least a triple meaning, connoting (1) the analytical errors of the late Lord Keynes and his followers, (2) the money illusions and the like that the Keynesian analysts impute to the general public, and (3) the widespread illusory beliefs that all sorts of reckless policies can be followed without uncomfortable consequence.

The deftness of the title is not the book's only merit. Hahn's thinking is independent and always vigorous, and his expression is comparably forthright. The defects of his essays are also bound up in these virtues. His independence of thought frequently involves him in misinterpretation of the views he criticizes and in logical inconsistencies of his own, indicating perhaps the lack of opportunity or inclination to benefit, in advance of publication, from the constructive criticisms of fellow economists. Similarly, Hahn's vigor of expression is likely to strike all but the most sympathetic of his readers as excessively dogmatic. His book certainly succeeds in titillating the anti-Keynesian emotions of an already convinced anti-Keynesian audience; unfortunately, it is not well constructed to do much more.

In the manner of the Elderly Conservative who always wins his argument with the Young Radical at the outset by announcing that he too was a socialist in his youth, Hahn makes much of his own "pre-Keynesian Keynes-

ianism." "All that is wrong and exaggerated in Keynes," he proclaims, "I said much earlier and more clearly" (pp. 6-7). He supports this assertion by reprinting reviews by Ellis and Haberler of his earlier work; and a whole chapter is devoted to parallel quotations from the *General Theory* and Hahn's own *Volkswirtschaftliche Theorie des Bankkredits* (1920).

Without question, Hahn did anticipate certain separate elements of the later thought of Keynes. We may also feel some limited sympathy for Hahn's grievance (p. 226) of having "never been able to understand why Keynes did not quote my work in his *General Theory* although there is no doubt he knew it, for he quotes me in the German translation of his *Treatise on Money*. . . ." On the other hand, it is also possible that Keynes may have regarded Hahn's ideas as insufficiently similar to his own to require acknowledgement. Hahn, arguing that bank credit was "productive" and falling thereby into some elementary confusions between saving and credit creation, gave an exclusively monetary emphasis to his theory of unemployment. Depression was caused by tight money and almost as surely cured by easy money. Otherwise, however, there was no problem of possibly insufficient effective demand except as a temporary aberration of the money market and business confidence. In the ultimate emergency, the government might have to purchase and store goods to maintain production, but only until private parties were ready to resume their buying under the beneficent operation of Say's Law.

It is of minor importance that Hahn failed to anticipate in any way Keynes's central doctrine of the possibility of a persistent under-employment (or over-employment) equilibrium. The real mischief, however, is that he distorts the Keynesian theories to make them fit into a preconceived mold of his own early thought. Thus Hahn imputes to Keynes, as to himself in 1920, a "credit expansion theory of employment" (p. 50, n.). Again, he attributes to Keynes "the picture of an economy in which output and employment are so tightly coupled with the amount of circulating money that they can only expand if the latter has been inflated" (p. 229). This may have been good early Hahnism, but one blinks to see such a view imputed to Keynes.

Actually, the sentence just quoted is also inconsistent with another charge that Hahn levels against Keynes—that (p. 164) he made an "unrealistic" choice of independent variables when he described interest rates as determined by liquidity preference and a fixed quantity of money, instead of assuming that interest rates would be stabilized and the quantity of money varied accordingly. To Hahn, this is not just a minor matter of theoretical exposition but the fundamental reason for what he calls, in a chapter title, the "Anachronism of the Liquidity Preference Concept."

Liquidity preference is rendered obsolete, according to Hahn, by the very situation that Lange and others have called the "pure Keynesian" case—when interest rates are maintained at rock-bottom levels by a policy of ultra-easy money. Then, without appreciating at all that he is affirming the crux of the doctrine he has just dismissed, Hahn observes: "Since very low interest rates cannot be reduced further, the stabilizing effect of interest rate reduction in a depression is destroyed. . . ." (p. 164). On the other hand, Hahn also subscribes to the view earlier in the same chapter that "For all practical pur-

poses, the classical monistic 'pure' theory of interest is necessary and also adequate to explain interest rates in a modern economy" (p. 149).

The dubious quality of Hahn's own thought on certain fundamental questions appear even more clearly in the essay "Is Saving a Virtue or a Sin?" Here he argues that "saving does not reduce 'effective demand'" (p. 92). This follows because saving means only postponed consumption (pp. 97-98). "The effect of saving on the spending schedule is therefore that the whole schedule is postponed for one year." Hence, since "savings mean delay in—not absence of—spending . . . saving cannot really hinder production and employment." Furthermore, "The incentive to invest in machines is the necessary correlative to delayed consumption." In this manner "saving creates its own investment opportunities" (p. 99).

While there are many more such instances of analytical gibberish, it would be unfair to leave the impression that Hahn's discussion is entirely at that level. Actually, there are many occasions when his invocations of the old-fashioned virtues are apt and effective. When he is denouncing fiscal irresponsibility in the midst of inflation, or the failure to appreciate the connection between balance-of-payments problems and domestic prices, or the cruder versions of purchasing-power arguments for higher wages, he deservedly commands our respectful attention. It is unfortunate, however, that his contributions stop short of promoting any deeper professional understanding of the really controversial issues.

ROBERT L. BISHOP

Massachusetts Institute of Technology

Wandering Scholar. By M. J. BONN. (London: Cohen and West, Ltd. 1949. Pp. 403. 18 *s*.)

Probably for very good and thrifty reasons, autobiographical literature by notable men in the field of political economy is not a frequent occurrence. When it does occur, economists should welcome the event as an opportunity to discover the man in relation to his times, the vicissitudes of fortune that influenced his life and how he evolved from it a philosophy of the world and of men. This, in general, is the broad scheme of experience and social intelligence that the author relates. It approximates, in essence, what a biography about oneself should be. Again, what is equally important and as noteworthy for the reader is the consummate literary skill and craftsmanship with which Dr. Bonn has handled the accounts of his life. There is nothing of the dry-as-dust and dismally-bookfed perpetration of prolixity in this book. Dr. Bonn was never of that kind and he is not so now. Truth, he maintains, is not co-extensive with bulk and padding benefits no one except the paper manufacturer. What Dr. Bonn has to say is said incisively. All is alive with zest, with *jeu d'esprit* and flashing wit, with humor and sparkle and poetry, and with dynamic exposition and trenchant commentary and analysis. The book is a joy and a good many chapters will be re-read if for no other reason than the poetic fancy of a vivid imagination.

Among our contemporaries there are relatively few who have shared so intimately and who have been in the midst of such colorful academic and

interesting and venturesome workadays of practical economic and political affairs as it has been the fortune or misfortune of Dr. Bonn. He lived to tell the tale about his teachers during an age when "a few spectacular examples of unmitigated professorial melagomania were still alive." At Heidelberg he "fell into the hands of Karl Knies." At Munich he studied under Lujo Brentano, "perhaps the greatest academic teacher that an age of great teachers produced," who sent him to Karl Menger at Vienna, whose lectures, says Dr. Bonn, foreshadowed the American textbook.

Next, we find Dr. Bonn in England and Ireland, at work on *English Colonization in Ireland* and *Modern Ireland and the Agrarian Problem*. The chapter on Ireland and Sir Horace Plunkett is a gem and a red-letter day. There follows an Italian Interlude and thence a year's sojourn in British South Africa and German South West Africa. The *Privatdozent* of the University of Munich was investigating conditions in colonial empires at first hand. An international personality was on its way. At Munich, as head of the College of Commerce, he gives us a first-hand account of the Wittelsbach. In 1914, he is visiting professor at the University of California; and subsequently at the University of Wisconsin and at Cornell. He tells about his work with the German embassy in Washington, the homecoming to see kings depart—the German revolution.

In the chapters on Versailles, which Dr. Bonn attended as a delegate, on The Tribulations of an Expert, and on The Great Inflation, we have source materials which no historian can afford to neglect and which the economist and student of civilization will find unusually informative and rich in penetrating insight and interpretation of human character and social and political institutions. Here are a great many sketches of the more and lesser important men in review and a gallery of portraits that are now in the closet. From the vantage point of the Rector Magnificus of the College of Commerce in Berlin Dr. Bonn describes and analyzes the decline of a civilization. His exodus, first to Austria, then to England and the London School of Economics, and thence, in 1939, to the United States and Canada and six years of visiting professorships in many colleges and universities, completes a knowledge of himself and of his age.

Not unlike others who have appeared on the witness stand of their own free will, the Wanderer and Scholar has his likes and dislikes and his faults and foibles. But these are minor. They are interesting, too, for no cycle of life takes its course without the transmutation of passing fancies into realities. Foremost, however, it is the unhampered historian who is speaking—never willing to propitiate the terms of his social contract—which makes this autobiography such an important book and a document.

Erwin Graue

University of Idaho

Economic History; National Economies

Capitalism and French Glassmaking, 1640-1789. By WARREN C. SCOVILLE. (Berkeley and Los Angeles: University of California Press. 1950. Pp. xi, 210. $2.50.)

The slow development of industrial arts and of the capitalistic organization of industry as preliminaries to the so-called industrial revolution have long attracted the attention of economic historians. To this literature as it pertains to France have been added since World War II such excellent studies as Bertrand Gille, *Les Origines de la Grande Industrie Métallurgique en France* (1947) and André Rémond, *John Holker* (1946), and now the book by Professor Scoville—a monograph heralded by a number of review articles.

The present study is not only interesting for the information which it contains, but also because it reflects a definite trend in the field of economic history in the United States—the description and analysis of basic economic issues rather than the mere accumulation of random data or the treatment of the economic background of some political problem. Thus, the author deals with the growth of the glass industry against a background of general economic expansion, market demand, technological change, investments, locational problems, and labor supply. Throughout he exhibits a mastery of his material. On one point only did the present reviewer desire more information and that was the economic importance of glass in allowing natural light into interiors, thus making them more usable as workshops in the cold months when windows had to be kept shut.

SHEPARD B. CLOUGH

Columbia University

Freedom and Planning in Australia. By A. CAMPBELL GARNETT. (Madison: University of Wisconsin Press. 1949. Pp. x, 331. $4.00.)

This book is an interpretation of Australian democracy from the vantage point of a scholar who has lived half of his adult life in his native Australia and half in his adopted America. He writes primarily for American readers but has, as he says, "occasionally injected a word to the Australians themselves." On the contrasts in education, for example, he has arresting words for both.

Professor Garnett's training is in philosophy, not in economics. He is as much concerned with social and political as with economic questions and writes of them all with notable clarity. Economists, and perhaps other specialists, will feel that he is guilty of journalistic over-simplification on some of their particular problems. They will also note occasional lapses in information. His American colleagues should have kept him from identifying indenture with slavery or from saying that the United States suffered no major depressions before 1929. But economists will have much to learn from the breadth of the setting within which the author places economic and political issues. Note, for example, his use of the familiar song, "Waltzing Matilda," to illustrate the bitterness of land-hunger in the country of the large man's frontier and of the modern "Ballade of a Convict's Daughter" as the symbol of a "mature patriotism."

The author is at his best in analyzing processes of institutional change. He writes realistically of the effect of the arbitration system in modifying and softening the class struggle, and of the factors which led Australian governments—pro-labor and anti-labor as well as labor—to extend the area of state action. The government railroads are a case in point. Private enterprise could not build the roads "without Government aid on a scale which"—according to nineteenth century Australian opinion—"ought not to be conceded." Students of American development should find the argument suggestive. Perhaps one reason why we arrived at a different policy is that our railroad enthusiasts were less modest in their idea of the amount of aid which governments might properly give to private companies.

Economists will be particularly interested in the contrast drawn between "The Battle against the Depression" of the nineteen-thirties and "Employment Policy" as accepted in present-day Australian thinking. What was remarkable about the measures of the 'thirties was that they represented a concerted policy agreed upon by the country's economists and adopted as their own by the country's premiers. Since that time faith in the "brains trust" has not diminished. "There are," says Professor Garnett, "few countries, if any, where the economists in the universities and in places of importance in the civil service are listened to with so much respect by the ministers responsible for shaping policy." But the substance of their advice would now be very different. In retrospect, the measures adopted during the great depression appear "in the main, orthodox and deflationary." Today's remedies would be based on positive action to maintain the level of total demand. Keynes has converted the economists—so the author sees it—and the economists have convinced the country.

Representatives of the Liberal, Country and Labor parties contribute final chapters on their respective programs, but the real conclusion of the book lies in the chapter on "Underlying Concepts and Attitudes" in which the author emphasizes the area of agreement and common purpose among the three. "No really radical proposal ever appeals to the Australian electors." The country is committed to social security, full employment and—in a phrase used very broadly and without close analysis—"to a planned economy." It is no less strongly committed "to the maintenance of democratic freedoms." In Professor Garnett's interpretation of Australian development, "a handful of people struggling to make use of a vast and difficult country" have found the democratic state a powerful instrument of cooperative action. "They have used the activity of the state to open safe channels for the activity of the individual."

CARTER GOODRICH

Columbia University

Statistics and Econometrics

Economic Fluctuations in the United States, 1921-1941. By LAWRENCE R. KLEIN. Cowles Commission for Research in Economics, Monog. No. 11. (New York: Wiley. London: Chapman & Hall. 1950. Pp. xi, 174. $4.00.)

More than a decade has elapsed since Jan Tinbergen published his two

volumes on the *Statistical Testing of Business Cycle Theories*. It is impossible to estimate to what extent Keynes' acid appraisal of the first volume (*Economic Journal,* Sept. 1939) prejudiced the authority of Tinbergen's work among economists, but it is clear that the work had little influence in the United States and that to Keynes himself is due the upsurge of econometric model-building in this country after the late war. The author of the book under review, however, acknowledges a debt to both sources. "This book," he says, "is written in the spirit of Tinbergen's investigations and is intended as an improvement and extension of his results. As a consequence of the extensive theoretical discussions since 1936, when Keynes published his *General Theory,* it has become possible to formulate more sharply the structure of the economic system and thereby to gain added simplicity and accuracy not available to Tinbergen at the time of his work." To the advancement of Tinbergen's program Dr. Klein brings a capacity for econometric work in the best and most comprehensive sense of that term. Here is no separation between economist and statistician: it is the work of an economist of demonstrated theoretical capacity and empirical knowledge, and of a statistician who knows his way about in the contemporary literature. The result is a much more coherent study than Tinbergen gave us, and economists in particular will feel safer in Dr. Klein's hands.

The book is divided into a theoretical and an applied part. In the first Klein sketches the statistical methodology he will employ and undertakes a full exposition of the passage from dynamic theories of the firm and household, and their market interactions, to aggregative economic models capable of statistical approximation. The main feature of the statistical methodology is "the estimation of parameters from systems of equations that have as many relationships as endogenous variables"—methods chiefly developed at the Cowles Commission for Research in Economics. The economic analysis is a more personal undertaking and is set out more fully. Most of what is new is contained in a mathematical formulation of theories of the firm. Two theories are developed, one in which the entrepreneur is a profit-maximizer, the second in which he seeks an optimum position between profit-making and asset-holding, measured against a utility scale which washes out in the solution for the optimum. It is chiefly the first theory, however, which forms the basis of the aggregative models. Similarly, Klein considers two theories of the household, one in which the household maximizes the utility of consumption over time; the other in which utility is treated as dependent on consumption and asset-holding, the latter being a formulation already presented by the author in *The Keynesian Revolution.* Finally, market interactions of firms and households are analyzed both in the competitive sense of price adjustments to remedy unwanted inventory positions, and in the quasi-monopolistic sense of output adjustments to the same end.

Brief as this sketch is, it is clear that Klein addresses himself squarely to the important task of bridging the gap between the neoclassical theory of economic units and Keynesian-type theories of total economies. No one before him has carried the task so far or said so much that is original and illuminating. Yet it must not be supposed that the job can be done with the finality

of a mathematical proof. A good deal of mathematics is involved in the attempt (though it should be added that anyone who has worked through R. G. D. Allen's *Mathematical Analysis for Economists* can follow most of the demonstration with ease, while a good deal less sophistication is adequate to stick with the main argument), but the final passage to aggregative models involves a wrench for which Klein finds sources of strength not always apparent to the reader. This defect may be unavoidable; to emerge with aggregative models of a suitably elementary sort, Klein must at some stage make statements about facts rather than about the implications of neoclassical premises, and his evidence is not always as decisive as one could wish. However, the problem is given a mathematical formulation by appealing to a theorem of S. S. Wilks establishing general, and supposedly common, conditions under which linear forms are insensitive to variations in weights. All this is set out by the author with great care and good faith, and it is a service to the uninitiated to show clearly just what is left undone after mathematics has worked its wonders.

Part II of Dr. Klein's study received a preview in the April 1947 issue of *Econometrica;* but the exposition has been extensively reworked and the discussion of a three-equation model (three endogenous variables) has been added. The new model investigates the separate influence of wages and profits on consumption and treats the volume of investment as dependent on the level and rate of change of profits. A second (single-equation) model treats investment as exogenous and the stock of cash balances as a factor in consumers' behavior. The third model is the twelve-equation construction previously published. Its chief features are (1) the treatment of investment demand as endogenous, distinguishing (a) inventories, (b) plant and equipment, (c) owner-occupied housing, and (d) rental housing; (2) provision of accelerators for inventory investment and investment in plant and equipment; (3) separate treatment of the demands for active and idle (speculative) cash balances; (4) explicit determination of the level of rents, interest, and prices. Much else of interest appears in this Part: an intelligible discussion of "identification" in the several models, evaluation of various (static) multipliers, and a discussion of the "stability" properties of the three-equation model. Rough checks are also made in justification of the omission of liquid assets as a direct determinant of investment and in rebuttal of the alleged defects of annual data. The book is rounded out by a chapter on the adequacy of available data and an Appendix lisiting the time series utilized, identifying sources, and detailing the operations necessary to adapt existing series to econometric needs.

Time has not dealt kindly with Dr. Klein's models considered as forecasting machines. There are good reasons why this should be so, and the author has acknowledged them by abandoning the dubious apparatus of forecasting zones which marred the earlier article. He claims only to have explained a segment of United States economic history, 1921-1941, and is uncertain how much of this history is relevant to the future. But economists and statisticians alike will find light in this book on a vast array of important questions: What are reasonable values of the various Keynesian coefficients for the United States?

What specialization of general Keynesian liquidity-preference theory is justified by experience? Do asset holdings influence consumption? or investment? What practical, quantitative differences are associated with alternative statistical methods—classical least squares, limited information reduced forms, maximum likelihood? If one concludes that these questions are not answered with finality, the fact is in large part a tribute to the candor and ability with which Dr. Klein assembles his argument.

MILLARD HASTAY

National Bureau of Economic Research

Human Behavior and the Principle of Least Effort. By GEORGE KINGSLEY ZIPF. (Cambridge, Mass.: Addison-Wesley Press. 1949. Pp. xi, 573. $6.00.)

A good many social scientists, like myself, have probably found an eerie fascination in the apparent empirical fact, for which there seems to be no very good reason, that in any fairly homogeneous and integrated area the population of the n^{th} city or community is roughly $1/n$ times the population of the largest community. Thus Chicago is about half the size of New York, Philadelphia about a third, Detroit a fourth, and so on down to the 10,000th city. This fascination will be increased considerably by a perusal of Professor Zipf's "Human Behavior," which is not about human behavior at all, but is an extraordinary compendium of empirical relationships governing what might be called "organized" frequency distributions. The harmonic law mentioned above—that when the frequencies of an organized frequency distribution are ranked they form a harmonic series—might well be christened "Zipf's Law." He discovers it first in language (Zipf himself is a linguist), and finds the harmonic law applying to word frequencies in languages as diverse as Chinese, Greek, Gothic, English, and Nootka Indian. He finds it in samples of language as various as the *Iliad*, James Joyce's *Ulysses*, the *Chicago Tribune* and the prattling of children. In all these cases if the rank of a word in the order of frequency of use is plotted against the frequency on double-logarithmic paper the result is approximately a 45° straight line: if F_n is the frequency of the n^{th} rank, then $nF_n = C$, or $\text{Log } F_n = \text{Log } C - \text{Log } n$. What is even more startling, he finds substantial deviations from this harmonic law in the speech or writings of schizophrenics. The same law pops up, as we have noticed, in population distributions, and here also he suggests that deviations from the law may be significant: thus there was a sharp break in the population-of-cities series for the United States just before the Civil War, which gradually disappeared after it. It is even more surprising to find examples of the same law, or close relatives of it, in such things as the distribution of intervals in Mozart's bassoon concerto, the distribution of news items in a newspaper, the distribution of distances between the homes of marrying couples, the distribution of incomes (except at the lower end) the distribution of assets, the distribution of publications of chemists, and the distribution of items on concert programs.

The mass of empirical evidence is impressive enough to be disturbing without being impressive enough to be convincing. At no point are there any

rigorous theoretical demonstrations, though there are many suggestive and illuminating analogies. In order to explain the harmonic law he introduces two rather vague forces—the "force of unification" which would lead to the concentration of the whole population into a single category, and the "force of diversification" which would lead to a uniform distribution. In some way the tension between these two forces is supposed to lead to the harmonic law. The guiding principle which governs these distributions is said to be the "principle of least effort," or of least probable work. At no point, however, is the harmonic law derived by any process of minimizing the "effort" variable expressed as a function of the distributional patterns. Indeed, as every economist knows, a principle of maximization or minimization in itself cannot lead to any law of distribution, unless this law is already implicit in the transformation functions relating "effort" to product, and we still have to explain why the law is thus implicit.

It is a situation of profound discomfort for any science to be presented with empirical laws which do not follow from its theoretical models. If the empirical evidence presented by Zipf is to be taken seriously, social science today is somewhat in the position of astronomy between Kepler and Newton, when the empirical laws of the motions of the planets had been roughed out but the derivation of these empirical laws from the single principle of gravitational attraction had not yet been performed. Indeed, the comparison between Zipf and Kepler is not altogether inapt—there is the same inordinate capacity for taking pains, the same Pythagorean obsession with the mysteries of number, and the same inability to formulate rigorous theoretical models and the consequent retreat into analogy. It may be, of course, that the empirical evidence presented is so biased as to lack real significance. It is notoriously easy to go astray on double-logarithmic paper! There are no adequate tests of statistical significance of his empirical functions. There is no evidence that the relationships presented are a random sample of the universe of such relationships. And we all know that it is fatally easy to find what we are looking for and to neglect evidence that contradicts our predispositions. Nevertheless, there is enough evidence here to be disturbing. Most of our statistical theory is based on the concept of a law of random distributions. If there are in fact laws of *organized* distributions, the possibility of a whole new science opens up, and substantial revisions of present theory may be in order. His fellow-academicians are unlikely to take Zipf seriously in view of his "disreputable" enthusiasm and the occasional absurdities in his work. It would be a pity, however, if because of this the problem which he raises were neglected.

K. E. BOULDING

University of Michigan

Introduction to the Theory of Statistics. By ALEXANDER M. MOOD. (New York: McGraw-Hill. 1950. Pp. xiv, 433.)

To many economists, statistics is just the organized collection of certain kinds of economic data, a branch of the broad domain of economics not unlike accounting. Very little genuine theory has been formulated for such activities though there are good beginnings in the report of the Committee on Government Statistics and Information Services (Social Science Research Council

1937), *The Statistical Agencies of the Federal Government,* by Frederick C. Mills and Clarence D. Long (National Bureau of Economic Research, 1949), *On the Accuracy of Economic Observations,* by Oskar Morgenstern (Princeton University Press, 1950) and numerous articles in the journals. Excellent work on special subjects appears in various research reports but no comprehensive theoretical synthesis has yet been produced. Here there is a great need for systematic work closely coupled with the research programs of governmental and private statistical agencies and with the theory of equivalent processes of observation and measurement in other branches of applied science. In this systematic theory, one of the central theoretical subsystems will be drawn from mathematical statistics. Other subsystems will be derived from psychology, sociology, economics, politics, engineering, logic, and law.

The development of mathematical statistics has been especially rapid during the past three decades. It has gone far beyond the stages that are represented in the textbooks from which most economists and other social scientists learned their statistics. The book under review is not only a good text for students who can handle a little calculus and read a closely reasoned argument, but is also valuable to economists who want to come to close grips with the theory of statistics as an application of probability to sampling, testing hypotheses, designing experiments, and preparing estimates. It has been tested by several teachers before publication and has already a very favorable reputation as a text. It belongs to a new generation of books, published since the war, that provide an ample introduction to the statistical variety of inductive inference and empirical research.

The weaknesses that are exhibited by this book do not appear to be serious, considering the level of mathematical sophistication it assumes of its readers. There are many new developments that might have been described briefly, yet the author must stop somewhere if the book is to be of reasonable size. For example, the concepts of loss functions and decision functions would be of special interest to economists since they illustrate the way in which mathematical statistics is incorporating economic components in its basic theory. The introduction of probability in terms of equally likely events is a bit disappointing. The concepts of drawing at random and random variable are not explained clearly enough to avoid confusion of some readers (pp. 9, 46, 127). Also, on page 245, the reader may be puzzled for a moment when he attempts to answer the question of which mean is larger by either accepting or rejecting the *null* hypothesis that they are equal. Offsetting such weaknesses as these are interesting and helpful explanations of many points, such as page 65 on continuous variates and page 157 on maximum likelihood.

The extent to which recent developments have been included may be judged from the introduction of a section on components of variance, and chapters on sequential tests of hypotheses and distribution-free methods. In the present stage of mathematical statistics no one can say that Mood has produced the optimum book of its kind but he has done very well in his selection and treatment of the principal topics. Social scientists might ask for exercises more to their liking but otherwise they will find the book very useful.

FREDERICK F. STEPHAN

Economic Systems; Planning and Reform; Cooperation

Making Capitalism Work. By DEXTER MERRIAM KEEZER AND ASSOCIATES. (New York: McGraw-Hill. 1950. Pp. ix, 316. $3.50.)

This book is a joint study by Dr. Keezer and four members of his staff in the Economics Department of the McGraw-Hill Publishing Company. Although not representing an official expression of the company's views, it is the outgrowth of the work done by that department in servicing the various McGraw-Hill trade publications and operating units. It appeared shortly before the outbreak of hostilities in Korea. The authors are preparing a supplement based on post-Korea developments, which will be available on request by the time this review appears in print.

Presented as "a program for preserving freedom and stabilizing prosperity," the book ranges over all major fields of economic policy. Its chief emphasis, however, falls on three problems that the authors regard as crucial for the future of American capitalism. These lie in the areas of taxation, incentives and opportunities, and economic education. All three problem areas are seen as interrelated, but the need for action is regarded as most pressing in the fiscal area.

The first premise of the argument here is that American capitalism cannot bear any substantial further increase in the share of output used by government. From this the authors conclude (1) that public expenditures must be kept from increasing any faster than national output; (2) that every effort must be made to accelerate the growth of output; and (3) that the tax system should be overhauled so as to make it less burdensome to enterprise. The last two of these objectives are met by the now familiar combination program of lower tax rates on corporations and upper-bracket individuals, credit for corporate income distributed as dividends, more liberal depreciation allowances, and more liberal carryovers. These changes would provide incentives and venture capital for larger investment and thus accelerate the growth of productivity. Some of the loss in revenue from the above tax concessions would be made up by tightening the estate, inheritance, and gift taxes.

It is evident that the case here rests largely on two propositions: (1) that the importance of the government sector of the economy (as of early 1950) is a threat to capitalism; and (2) that tax reduction is necessary in order to stimulate a more adequate flow of private investment.

On the former point the book is alarmingly positive. We are told that "Government spending now (pre-Korea) is straining the nation's resources" (p. 279), and that an added 10 billion dollars of military expenditure, for example, would "wreck" the economy (p. 286). No qualifications to these statements are admitted, short of war. No real substantiation is offered. If the conclusion is accepted, capitalism in America has already been dealt its deathblow by the post-Korea federal budget.

The urgent necessity for tax reduction as a stimulus to private investment, and thereby to more rapid increase of output, is really the central theme of the book. In the index, references to taxes get almost twice as much space as any

other topic. The issue is discussed at length in the two longest and most important chapters, entitled "Give Us The Tools" and "On General Economic Stabilization."

The conclusion is, briefly, that we need to keep plant and equipment investment up to at least its postwar share of the national product, and that to do this we must immediately lower the tax burden on corporations and wealthy individuals. The supporting argument can be legitimately criticized only by disregarding events subsequent to publication, which throw a quite different light on the whole problem.

A basic requisite for saving U.S. capitalism, according to the authors, is to continue to devote at least as large a proportion of national output to private investment in plant and equipment as in the height of the postwar boom. That level is characterized as "not out of line with past periods of prosperity," and several charts are offered in evidence.

Trend charts by Terborgh and Livingston are presented, showing outlays for producers' durable equipment over the period 1869-1949. On Terborgh's chart (p. 20), only two previous peaks in 80 years were (percentagewise) as far above the "normal" trend as 1948; on Livingston's chart (p. 23), only one. There is also a chart by Louis Bean (p. 22), the import of which seems to be that, since there were 3 million unemployed in 1948, capital expenditures were not too high. Finally, there is a chart (p. 18) which will, I suspect, be primarily useful to teachers of elementary statistics as an example of the pitfalls involved in choice of scales.

More fundamentally, the authors do not really face up to the crucial problem of investment projection for sustained full employment: whether a degree of emphasis on investment that has been attained only *occasionally* in past history is the right standard for *continuous* performance in what we hope may be a more stable economy.

At times it is not entirely clear that the authors really have such an objective in mind. In some of the discussion, it appears that the idea is merely to spin out the postwar boom a few more years—though nowhere, to be sure, is the problem of an eventual adjustment to a lower ratio of investment to output discussed. Thus, it is stated that even the 1949 rate of plant and equipment investment (considerably lower than 1948) is sufficiently supernormal to liquidate in 14 years an "accumulated deficiency" of more than 80 billion dollars. That is, the 1949 rate is regarded as about 6 billion dollars above normal (p. 23).

This "accumulated deficiency" is, as the authors recognize, rather shadowy. It is simply a net total of all differences between private investment and its trend since 1929. To the extent that the huge "accumulated deficit" is statistical fiction, the "supernormal" 1949 rate of investment becomes a still more dubious objective from the stability standpoint, since it would liquidate the backlog not in 14 years but in a shorter time. Moreover, is it not arbitrary to say that the supernormal investment of each boom represents exclusively the making up of a deficit accumulated since the previous boom? Would it not be just as logical, and fit the figures just as well, to regard the subnormality of investment of depression periods as a necessary making-up for

the excesses, or anticipation, of investment during the previous boom? Neither of these concepts helps us much; nor is it helpful to state, as the authors do, that many of our coke ovens, machine tools, looms, and other capital goods are old and relatively inefficient. We are not told how their present state of obsolescence compares with that of any past period; and surely in a technologically progressive economy most of the existing stock of machines at any time must be less efficient than the latest models.

The above criticism is essentially methodological, since the policy implications are already partially obsolete, or at least untimely. It is directed at flaws in the authors' arguments rather than at their final more cautious conclusion that business investment, "for the next few years at least," should not be "drastically" reduced below its 1949 proportion of total national output. It is doubtful that many would have taken serious issue with that statement, even when the book was written. The authors' challenge appears to be directed at the views of unspecified "New Dealers" and "purchasing-power theorists" expressed in the 1930's, or perhaps at the presumed 1950 views of the same people. To these mysterious opponents is ascribed the view that "expenditures by ultimate consumers, as opposed to capital expenditures, are the only support of prosperity" (p. 14).

The authors' apparent desire to stimulate investment further, by immediate enactment of a whole series of tax stimuli, is somewhat at variance with their advocacy of a vigorously flexible countercyclical stabilization policy in a later chapter. If the aim is to smooth out the business cycle, the time for greater inducements to investment is when investment is *below normal and falling*, not when it is *above normal and rising*, as in 1950.

The authors feel that the major problem in meeting the objective will be in finding the necessary funds: "As matters stand, the country is confronted by a crisis in the financing of an adequate flow of investment by business—a crisis the full impact of which might be deferred for a few years, but which also presents the possibility of descending with unexpected suddenness" (p. 37).

The authors' supporting argument here too evokes some question. It is based on the assumption that "with normal prosperity" profits after taxes will be more than 10 per cent below the 1949 level and that a smaller proportion of these reduced profits will be retained for reinvestment. With plant and equipment outlays rising from the 1949 level in proportion to the growth of gross national product, the authors' conclusion is that corporations will soon need to raise 4 to 6 billion dollars annually through the stock market. In so far as it is possible to check the calculations involved, which are not stated in full, it appears that this sum is virtually the whole of the prospective external financial needs of corporations. This is confirmed by the authors' statement that business is now so far in debt that it should raise all but "a minor part" of the needed new funds in equity form. The conclusion is that corporations will not be able to sell 4 to 6 million dollars' worth of new stock annually, because of "public indifference and the weight of taxation"; and therefore that tax concessions are urgently needed to close this financial gap.

This argument makes no explicit allowance for any improvement in salability of stocks resulting from the recommended encouragement of institutional investment in business equities. A more important point to note, however, is that the assumed fall in business earnings is just an assumption. If earnings after taxes should really decline to the postulated level (which is nearly 30 per cent below that of the first half of 1950), would business still seek funds to invest in plant and equipment at the 1949 rate or better? If not, the estimated shortage of equity funds is at least partly fictitious. Or on the other hand, if the authors have been overly pessimistic in estimating profits, the internal supply of equity funds will be greater than they assume. A quite moderate change in the profit assumption could in fact completely eliminate their estimated shortage of equity funds.

Finally, it is easily possible to disagree with the authors' view that business should stop borrowing. If, for example, corporations are willing to maintain the early-1950 ratio of equity to assets, this policy would (under the authors' assumption) permit further borrowing on a scale nearly sufficient to take care of the entire need for external funds as estimated by the authors. In other words, the alleged need for a drastic step-up in stock flotations assumes that it is urgently necessary to reduce the debt/equity ratio.

This crude ratio has well-known shortcomings as a measure of the burden or risk of debt under present circumstances. Past price rises and accelerated depreciation have operated to overstate the ratio in comparison with prewar years, and no account is taken of the fall in interest rates. With a reasonable allowance for the price-change and interest-rate factors, in fact, it could be argued that the burden of corporate debt interest changes in 1949 was markedly less than in 1929 or 1939. This raises some doubt as to whether it is really so urgently necessary to stop business borrowing and cut back the debt/equity ratio.

The question of business borrowing has another aspect, not quantitatively analyzed in the book. A large part of total savings in our economy will continue to seek fixed-return investment. Even with such changes in personal tax rates, insurance investment laws, and the attitudes of investors as our authors advocate, it might well be that the supply of such savings would exceed the needs or demand of nonbusiness borrowers. Some continued expansion of business debt would then be needed to absorb a full-employment level of savings.

The foregoing criticism is not intended to disparage the authors' case for desirable permanent reform in our business tax system, nor for the use of the suggested tax incentives to support private investment at appropriate times. It is intended to indicate, without taking unfair advantage of hindsight, that the authors did not make a conclusive case in respect to investment objectives and the timing of stimulative fiscal measures.

Much of what the book has to say about ways to sharpen incentives is covered by the recommendations for easier taxes on businesses and upper-bracket personal incomes. In addition, however, the authors urge the necessity of reinvigorating competition by more government anti-trust activity; breaking down the union-sponsored tendency toward equalization of wages; and

tightening inheritance taxes while at the same time protecting the survival of small unincorporated businesses in the event of the proprietor's death. It is refreshing to find an explicit acceptance of the trend toward greater public responsibility for individual economic security and health, and an explicit even though somewhat tentative rejection of the oft-heard suggestion that the best way to stimulate productivity is by having more unemployment.

One chapter is devoted to a well-balanced discussion of "competition, the lifeblood of capitalism." In addition to the orthodox exposition of the virtues of the competitive market process in allocating resources, the authors develop a number of useful ideas of more recent currency. They point out, for example, that depressions pose a major threat to the effective working of competition, by motivating protective and restrictive behavior; that effective competition depends essentially on the policies of the competitors rather than their number or size; and that monopolistic power in the labor market can have consequences just as serious as in the markets for goods.

The inescapable theme of business tax reduction comes up in this chapter too. The authors attempt to prove that tax credits on dividends, liberalization of loss carryovers, and larger depreciation allowances would be a powerful restorative to competition by aiding new firms to get started and grow. Although it is hard to differ with the proposition that lower taxation of business in general encourages competition, there is surely some doubt whether these specific tax changes would help new and small businesses as much as their larger and better-established competitors.

If our business tax system has increasingly penalized growth as such, as the authors assert, we might expect to find as a result a more equal size-distribution of firms. Actually, the evidence presented on the relation of taxes to business concentration is inconclusive. One chart merely shows that in the past decade tax rates have risen and the average physical output per firm has also risen. The text states that there has been a decrease in the number of firms started per 1,000 nonfarm population—though the accompanying 1900-1948 chart (p. 232) scarcely bears this out. Finally, the point is made that there is a declining number of firms in existence per 1,000 nonfarm population. It may still be asked whether this necessarily indicates anything about the effect of taxes. With the vast improvement that has occurred since 1900 in transport and communication facilities, for example, one might reasonably expect that the average business firm could economically serve a larger number of customers.

Additional chapters round out the book by analyses of international economic relations, social security, and resources conservation. In each there is a non-doctrinaire presentation of the responsibilities facing business, labor and other interest groups and government.

The book as a whole is notable for its clear, persuasive and readable style. Even those who may object to some of the major conclusions or the quality of the supporting arguments will find here thoughtful and informative material in a variety of fields.

Edgar M. Hoover

Washington, D.C.

Political Economy. By JOHN EATON. (New York: International Publishers. 1949. Pp. 230. $2.50.)

This "Textbook of Marxist Political Economy" results from two years of collaborative "research" by a group of Marxian economists. Responsibility for the present text was assumed by John Eaton, the secretary of the group. British labor, we are told in the Foreword by Emile Burns, is being misguided by "right-wing" leaders who wish "to save British capitalism at the expense of the workingclass and the colonial peoples." These leaders, it is claimed, having derived their ideas from "bourgeois" economists, "evade or deny" the exploitation and class conflict peculiar to capitalism. Hostile to the Soviet Union and other countries embracing the true socialist faith, they seek to establish a "British type of socialism" consisting of a "mixed economy" of private and "state capitalism." The work aims, therefore, to acquaint British workers with the essential nature of capitalism and, thus, to guide them in building a truly "Socialist Britain."

The analysis is carried forward in a straitjacket of the traditional Marxian theories. About a third of the book is used in restating Marx's labor theory of value and in attempting to demonstrate, statistically, the amount of surplus value produced by workers in existing industries. The author thinks that "bourgeois" economists went astray in abandoning Smith and Ricardo's theory for marginal utility. His comments on marginal utility show a grasp neither of the content nor of the limitations of the theory. For example, he states: the theory "maintains that value is determined by the utility not of all goods but of the goods 'on the margin' which divides the goods that are sold from those that are left unsold." He further contends that the theory has proved to be so unsatisfactory that "capitalist" economists "try to make do without a theory of value at all—a tacit admission that they despair of giving a rational explanation of exchange and distribution in modern societies" (p. 21). In contrast with the "unscientific" and "erroneous" procedure of "bourgeois" economists, Marx developed his theory "on the scientific foundation laid by the great capitalist economists . . . , Adam Smith and David Ricardo, for whom the labour theory of value was the keystone of economic science" (p. 20). Limitation of space prevents any thorough discussion of the differences between the labor theory as held, on the one hand, by Smith and Ricardo and, on the other, by Marx. It should be noted, however, that in Ricardo's use, "quantity of labor" is measured by wages while in Marx's it is measured by wages and profit (surplus value). Moreover, there is nothing in Smith and Ricardo from which Marx could have derived his views that labor, as distinct from labor-power, *"has itself no value"* and that the "capitalist cost" is the *expenditure of capital* but the actual cost is the *"expenditure of labor."*

As an example of the creation of surplus value in existing industries, the author takes the "factory selling price" of cement per ton for 1935 and from this substracts "total cost" (depreciation and wages). The remainder is a margin over cost which he labels "surplus value" appropriated by the exploiters of labor in the form of interest, rent, and profit. We assume that these and other figures cited have been correctly reported and, therefore, we call

attention only to the author's economic logic. The author imagines that he can determine the profit conditions of an industry simply by taking "average price" and subtracting costs for a single year. It seems not to have occurred to him that the firms comprising an industry would in any case have different costs and that to arrive at any fairly reliable picture of an industry, the losses as well as the profits of the different firms would have to be considered for a number of years. One certainly cannot talk intelligently about the profits of industry without taking the losses into account. Under capitalism, society secures the amount of production it requires by paying people to save and by rewarding them according to differences in ability and talent. One alternative to this method is the use of force. Both methods are used in the Soviet Union. And, if inequality of rewards due to differences in ability, capacity, or luck involves exploitation, as it certainly does in numerous instances, then exploitation exists in the "First Socialist State" no less than in "capitalist" Britain and the United States.

No Marxist critique of capitalism would be complete if it did not contain a reiteration of Marx's famous theses on the "concentration of capital," the trade cycle, and "imperialism." In his discussion of these topics, the author faithfully adheres to the Marx-Lenin-Stalinist interpretation. He thus considers monopoly to be inevitable under capitalism but discusses the problem only in connection with the "tendency" of production to concentrate in large undertakings. No thought is given to such important sources of monopoly power as specialized capacities and inherited ability among human beings. These sources of monopoly are protected in the Soviet Union by patent and copyright laws just as they are protected by similar laws in capitalist countries. As to imperialism, it is simply monopoly-finance capitalism in its dying phases. This *ought* to be taken to mean that imperialism while on the decline among Western powers is being given a new lease on life by socialist expansion in Eastern Europe and Asia. Time and space should not be wasted in giving serious attention to the author's belief that present proposals of the West to raise living standards in backward areas are simply designed to enable "the wage-slave . . . to produce more profit." One simply does or does not believe in predestination and original sin.

The work is just another example of Marxist "scientific method" as laid down by that eminent scientist, Friederich Engels. The author explains that this method is: (1) "materialistic and objective" which means following the method of the natural and physical scientist and "conceiving nature just as it exists, without any foreign admixture" (as, for example, when we see Space and Time?); (2) experimental because the findings are tested by practical actions (for example, when the workers prove Marx's theories by class struggle activities); and, (3) dialectical, not in any Platonist or Socratic sense of a mode of formal discourse, but as a means of revealing the secrets of nature and the "law of motion" of society. As applied to history, the dialectic (Marxist version) reveals society as evolving by means of its "internal contradictions" from "primitive communism" to capitalism and ultimately to modern classless communism. No evidence is submitted to support the idea of an historical stage known as primitive communism. And, the contention that

society is moving irresistibly to Marxian communism belongs to the realm of prophecy, not to that of scientific thought. Finally, when the Marxist contends that dialectic of nature refers to "contradictions" which constitute the driving forces of natural changes and, not to logical forms and categories for apprehending existential materials, he seems unaware that in his meaning the term either imputes animism to nature or simply expresses truisms about nature's operations.

ABRAM L. HARRIS

The University of Chicago

Modern Economic Problems. By M. H. UMBREIT, E. F. HUNT AND C. V. KINTER (New York: McGraw-Hill. 1950. Pp. xvii, 642. $4.75.)

The problems of this text are for the most part current issues of public policy. The range is wide, covering problems raised by government attempts and proposals to aid agriculture, provide social security, raise revenue, control utilities, stabilize the economy, etc. Throughout emphasis is on public policies for, as the authors state, "the solution of most economic problems involves some type of action on the part of the government."

Publication of such works emphasizes the shifting concern of economic texts. Those of twenty years ago dealing with both theory and its application usually limited the latter to tariffs, taxes, unions and trusts as the crucial problems for government action. Railroad rate-setting which often constituted the main area of positive public intervention in the price system in the older texts is not mentioned in the work at hand—so many other controls are demanding the spotlight.

Attainment of economic stability and the maintenance of conditions requisite for economic progress are viewed as the major problems of our economy. Together they form the authors' touchstone in selecting among the proposals presented, those to recommend. Stressed as the chief means for reaching these goals are reliance on competition to provide flexibility of economic adjustment and on monetary and fiscal policies to achieve stability in lieu of direct interference with the price system. Subordinated to stability and progress are the goals of economic incentive, security and the limitation of inequality. Wealth then welfare is the program.

The text is organized in six sections and twenty chapters; the former covering the areas of economic stability, international economics, direct government regulation, economic security and economic organization. Separate chapters on functions of government, resources, including population, and economic magnitudes comprise an introductory section.

In general, each chapter includes a statement of the major problems in the area often with their historical setting, an analysis of some suggested solutions and a conclusion in which the authors indicate their acceptance or rejection of various proposals. A page of review questions and a few exercise problems conclude each chapter. Frequent up-to-date tables add currency to the work.

Owing in part to the numerous problems raised in each chapter it is not surprising that the conclusions seem at times to rest on rather slender evidence.

Nevertheless, though refraining from categorical answers on many issues, the authors have taken their stand rather unequivocally on important questions, *e.g.*, the authors advocate the desirability of: limiting population increases and restricting immigration, the 100% reserve plan, stabilization of the total volume of spending, establishment of capital banks as adjuncts to commercial banks, restriction of taxes to revenue objectives, reduction of the national debt, breaking up monopolies, limiting utility commissions' functions to the problems of rate discrimination and unreasonable profits, and avoidance of direct price controls except in wartime. Present marketing costs are accepted as moderate. In the main the authors seem to have striven after balance both in their choice of problems and in the discussion of suggested solutions. In general a liberal-capitalist viewpoint prevails. An exception appears to be in the discussion of labor problems where most of the problems and "solutions" involve a change in the organization or activity of unions. "We have not," the authors state, "emphasized the beneficial results which organization produces."

What purpose can such a book serve? Its authors suggest that used in conjunction with a principles text this is, "to aid students in applying economic principles to the solution of our major economic problems." Of the necessity of *using* principles in order to grasp their meaning the reviewer is in agreement. What is questioned is the ability of students to transfer the rigor of abstract analysis to the realm of broad policy questions involving decisions of a political and sociological nature as well. In the attempt to cover a wide array of policy problems, much of the analysis consists of readily accepted explanations which are used to form the basis for fairly specific conclusions on a broad range of subjects. Little or no evidence is included which might contradict the conclusions reached.

Does this type of problem force the student to use his analytical tools to select the pertinent data from the extraneous, to reduce the problem to one of unknowns on which economic analysis can be brought to bear and to recognize gaps in the data which must be filled by explicitly stated assumptions or the acquisition of more facts? Does the material force the student to construct hypotheses and then test them against the facts? These would seem to be the pertinent criteria distinguishing descriptive material from analytical problems. However useful a survey of the important controls proposed or enacted for altering the consequences of our economy toward stability and economic progress, it does not appear to be a substitute for developing the ability to use clear and rigorous methods of reasoning on economic questions. To the reviewer, the focussing of attention on broad policy issues at the elementary level may leave the student with a set of more or less ready answers in the form of policy prescriptions and a wonderment at the usefulness of formal theory, its tools and principles.

It is with these considerations in mind that the usefulness of problem texts such as this is questioned.

John M. Crawford

Carnegie Institute of Technology

How To Stay Rich: The Story of Democratic American Capitalism. By ERNEST L. KLEIN. (New York: Farrar, Straus and Company. 1950. Pp. xxiii, 196. $2.75.)

Here is another short volume to add to the expanding book list concerned with the advice to the American people on what to do now that, for the first time, our capitalistic system is being seriously challenged. But we are not told exactly what is challenging it.

The test offered for distinguishing the welfare state from free enterprise is based on the difference between "thou shalt" and "thou shalt not." The author believes that the checks on the profit motive that are necessary to prevent the economically strong from taking advantage of the economically weak can be phrased like the ten commandments. When we are told what we shall do, totalitarianism is here. From the necessarily practical viewpoint, this test is just too naïve to be mentioned seriously.

An American Platform is offered, but, like so many another, it is too brief and too broad to treat adequately, not the complexities of our present system that we like, but the complexities that have inevitably developed and that are existent. The public relations counsel that the author would use to "educate" the American people of the wonders that are theirs if free enterprise is retained, are, of course, equally available to those who desire modifications of the system that are beyond the pale staked off by the author.

A most conclusive argument for the necessity of more production is given, and, though capital is somewhat generally favored in the selection of examples of despicable activity mentioned throughout the text, the author here does state clearly that both capital and labor have offended in various ways of restricting output. "Enlightened and humanitarian capitalists" are praised more than the history of the American labor movement would seem to substantiate. For instance, it is most likely not true that "to every adopted reform, capitalism has had the power to say *No*, but has elected to say *Yes*."

The public welfare is, and can be, always argued as the reason for any change or as the reason for maintaining the *status quo*. The thesis presented by Mr. Klein fails to account for the broad social circumstances that precede changes in government policy. There is some evidence in these pages that the author has overlooked the fact that change is just as indigenous to our land as democratic American capitalism—which is here credited with a list of accomplishments (Professor Beard's), any one of which would have been hailed by the Kleins of previous days as the then existing challenge to the preservation of the American way of life.

In the Appendix, there is a critique of the work of the Flanders Senate Committee investigating corporate profits. Neither here nor elsewhere are mentioned the prevalent practices of monopoly and monopolistic competition. There is nothing about a policy on trusts, either.

In a somewhat compromising mood, apart from his American Platform, practically all of the existing social legislation is accepted as desirable. Although proclaiming unending faith in the intelligence of the American people —a plank in the platform, in fact—the author still feels compelled to issue this

halt order to those same intelligent people on their supposed march to the land of the devil, called the welfare state by the present totalitarian-minded leaders of these intelligent American people, but actually, according to the more precise wording of Mr. Klein, the police state.

JOHN J. GRAHAM

West Haven, Connecticut

National Income and Social Accounting

America's Capital Requirements—Estimates for 1946-60. By ROBERT W. HARTLEY AND ASSOCIATES. (New York: Twentieth Century Fund. 1950. Pp. viii, 244, $3.00.)

This is described in the Foreword as "a technical supplement" to *America's Needs and Resources,* published by the Twentieth Century Fund in 1947. It represents a revision and development of estimates on capital requirements which served as the basis for the projections in Part III of that volume.

Work on this project began as far back as 1942 under the auspices of the National Resources Planning Board, as a study of requirements for new construction. With the demise of the Board in 1943, the undertaking was bequeathed to the Twentieth Century Fund, which broadened its scope to include capital equipment (other than consumers' durables), developed a new framework of basic assumptions, and proceeded to proliferate a comprehensive and detailed set of requirements estimates stretching forward to 1960.

One of the inescapable difficulties of a project extending over seven years is in bringing the results down to date at the time of completion. Unfortunately, this difficulty has not been surmounted in the present study. Not only has publication lagged two and a half years behind the final revision of the estimates; that revision itself "does not take account of economic conditions since the winter of 1945-46." The result is the release, in September 1950, of projections for 1946-60 based almost entirely on data prior to the beginning of that period. This is done notwithstanding the acknowledged fact that "the capital outlays that have occurred since 1945 in some of the fields covered by these studies have greatly exceeded the average annual requirements estimated in this report."

With all due respect for the difficulties inherent in so ambitious a project, we consider a five-year lag behind actual events to be inexcusably long. One can only wonder how far the projections for 1951-60 are vitiated by the differences between the projections for 1946-50 and the now-known capital outlays of that period, especially where these differences are wide. Doubtless the revisions for the future based on present knowledge would be minor in some cases and substantial in others, but how is the reader to know without detailed checking?

While the validity of the projected capital requirements for the next decade is impaired by this regrettable lag in the source figures, it is impaired also by another factor, this time quite beyond the control of the sponsors of the project. We refer to the defense emergency. For all we now know, we may be in a defense economy for the entire decade, but even if it is of shorter

duration it is bound to generate major distortions in capital formation, not only while it lasts, but in the aftermath. From this standpoint the report is the victim of an exceedingly unlucky break.

It would be fair neither to the work under review nor to its potential readers to leave it with only this statement of reservations. The fact is it embodies a tremendous amount of material and analysis, logically organized and well presented. Even apart from the requirements projections which are its main objective, it is of real value as a compilation of sources and statistics on capital formation. As for the projections themselves, they provide at least a starting point for anyone wishing to exercise his prophetic gifts in this exceptionally treacherous area.

GEORGE TERBORGH

Washington, D.C.

Business Fluctuations; Prices

The Dynamics of Business Cycles: A Study of Economic Fluctuations. By JAN TINBERGEN and J. J. POLAK. (Chicago: University of Chicago Press. 1950. Pp. x, 366. $5.00.)

Thanks to Dr. Polak, we now have available in English Professor Tinbergen's textbook on business cycles, which was first published in Dutch in 1942. Written by one of the world's foremost econometricians, the book offers an elementary theoretical analysis of business cycles. The point of view is that of the econometrician, seeking not only to find significant regularities in economic behavior but also to state the relevant causal relations in the precise and simplified forms required for mathematical and statistical work. While the approach is that of the econometrician, no mathematical symbols whatsoever are used. Hence, the book should be easy reading for any trained economist, however much he might shrink from a little algebra.

Part I, entitled "Description," has separate chapters on the various types of economic movements. This reviewer was favorably impressed only by the brief chapter on international differences in fluctuations, which could well have been expanded to give the author more of an opportunity to use his unusual stock of information about business cycles in different countries. The other chapters in Part I are disappointing. They do not give the student a good idea of the types of economic fluctuations and of their interrelationships. The treatment is too brief; the approach is descriptive and statistical rather than economic; and the whole subject of causation is eschewed. Much of the treatment is superficial; and important qualifications are frequently missing. The dichotomy between "Description" in Part I and "Explanation" in Part II does not work out well.

The heart of the book is in Part II, where Tinbergen attempts to explain the different types of economic movements. The weakness and strength of his approach is illustrated by the chapter on long-run development. Economic development is analyzed in terms of a highly simplified model, which is based on the Cobb-Douglas production function. His chief concern is with the effect on total output and factor returns of changes in population and the supply

of capital. Mention is made of technology, but it cannot be said that there is any real analysis of the course and effects of technological change during the last two centuries.[1] In reading this chapter, I could not help thinking of Schumpeter, to whom there are only two incidental references in the whole volume. Schumpeter has an organic conception of economic development, in which secular change and cyclical fluctuations emerge in effect as different aspects of the same dynamic process. Tinbergen puts the economy in a mathematical straitjacket (even when he is not using mathematical symbols) and thereby loses touch with the reality he is trying to explain. The chapter will provide a useful intellectual exercise for students in a kind of aggregative, essentially static theory. But it does not explain economic development.

Tinbergen's analysis of business-cycle fluctuations is concerned with answering the question: what regular and unchanging relations among what important variables are likely to create cyclical fluctuations? Or, put differently, what is the character of the response mechanism of the economy which causes it to react in a series of cycles to random disturbances? Using the conventional aggregative approach, which begins with the basic identity $Y = C + I$, he sets out to develop explanatory hypotheses regarding the determinants of I and C. In more recent terminology, he sets out to develop "behavior equations" for these variables. The character of the ensuing analysis is suggested in part by his treatment of technological changes as random disturbances (pp. 173-74, 191). Net investment in fixed capital is made to depend, with appropriate lags, on profits, the price of capital goods, and to a minor extent, on the interest rate (including share yields).[2] There is also brief treatment of the determinants of replacement expenditures and of investment in inventories.

Consumption is made a stable function of total income and the cost of living. (The book was written before the recent work which casts some doubt on the short-run stability of the consumption function when expressed in such simple terms.) Unlike most economists, Tinbergen includes speculative gains in Y, and these gains are made to depend on the rate of change in income a short time before.

Several arithmetic illustrations are presented to show how these relations, with given constants and lags, can be combined into models which generate business cycles in response to an initial disturbance. Even after some discussion of "other characteristics which need to be added to obtain a reasonably realistic picture" (p. 202), Tinbergen does not wind up with a very clearcut or convincing picture of why and how business cycles occur.[3]

The chapter on long waves is surprisingly inadequate. In Part I, dealing

[1] His analysis in this respect does not amount to much more than the assumption that, during the decades before World War I, technological improvements caused production to increase at about the rate of one per cent per year.

[2] *Cf.* his *Statistical Testing of Business-Cycle Theories*. I. *A Method and Its Application to Investment Activity* (League of Nations, 1939).

[3] Mention should be made of the chapter entitled "Theoretical Postscript," which presents an excellent nontechnical treatment of the relation between the endogenous movements of a model and the disturbances which react on it.

with "Description," long waves were assumed to exist, but there was almost no discussion of the evidence. Chapter 12 in Part II is entitled "Long Waves," and since it occurs in the analytical part of the book, I expected to find something that could be called explanation of these movements. But in a chapter of four pages, Tinbergen does no more than: (1) state that the explanation of long waves "has not advanced very far," (2) refer to the fact that some economists doubt that long waves exist, and (3) summarize briefly the views of Cassel, Warren and Pearson, de Wolff, and Wagemann as to possible causes. Neither Kondratieff nor Schumpeter is mentioned, and Tinbergen himself assays no independent weighing of the evidence at all.

In contrast, there is an interesting and useful chapter on inflation which seems to anticipate some of the recent literature on this subject.

Limitations of space preclude any extended discussion of the concluding chapters on policy. A distinction is made between "direct" and "indirect" policies. The former operate directly on production and consumption; the latter do not. Taxes as well as monetary policy fall into the "indirect" category; and so do wage and price policies. Government spending is the chief type of "direct" policy discussed, though there is brief treatment of direct control of private investment and of some other measures. The various kinds of policy are evaluated in terms of their effect on the structural relations defining his model of the business cycle, the conclusion being that a compensatory government spending policy is likely to be most effective in achieving stability.

An instructor would have to be endowed with far more confidence in the possibilities of econometric business-cycle analysis than I possess to use this book as the main text in a course on business cycles. At the same time, I would strongly recommend the book to non-mathematical economists, and I would also suggest that students be made familiar with it. Here is an excellent way for the economist with little or no mathematics to absorb the philosophy of econometric model-building, and to observe some of the drastic simplifying assumptions which these models require. Tinbergen could obviously have offered a much more sophisticated treatment had he been writing for the mathematically trained reader, but this was not his intention. The sophisticated reader will also want to remember that this book was written before 1942, and hence does not cover the important recent developments both in business-cycle theory and in construction and testing of econometric models.[4]

R. A. GORDON

University of California, Berkeley

Monetary Policy for a Competitive Society. By LLOYD W. MINTS. (New York: McGraw-Hill. 1950. Pp. x, 236. $3.00.)

Provided the words are rightly interpreted, the main thesis propounded by Professor Mints in this thoughtful and vigorously argued book can be summarised in two sentences. (1) The forces making for instability in a modern

[4] Dr. Polak states that this edition closely follows the Dutch original. Some historical material was deleted, and one chapter (on war and inflation) and a few sections were rewritten.

industrial society are not so powerful that they could not be held in check by a policy which is purely monetary in nature. (2) To be effective, such a policy must be embodied in a definite rule of action, whose enforcement is not subject to the discretion of any authority. But these phrases must be carefully interpreted if they are not to lead to a misunderstanding of Professor Mints's position.

In the first place the concept "monetary policy" is not here contrasted, as it is by some writers, with "fiscal policy," the one operating through management of the banking system, the other through management of the public finances. On the contrary, Professor Mints's chosen instrument of policy is precisely the National Budget. Banks, as they have actually developed, are in his eyes a great nuisance, and Central Banks no better; and it is only out of a laudable desire to be realistic and not to cry (like some of his Chicago colleagues!) for the moon that he is led to assign them a rôle, though a minor one, in his scheme of operations. What "monetary policy" is here contrasted with, therefore, is not fiscal policy, but direct action by the State in organising capital outlay in order to achieve and maintain stability of employment at a high level.

Secondly, the rule of monetary policy to which, after discussion of alternatives, Professor Mints awards first prize, is stabilisation of the general price-level; and it is admitted that the operation of this rule would involve an element of discretion on the part of the monetary authority—not indeed as regards the objective to be aimed at, but as regards the scale of action necessary to achieve it.

This being understood, let us look more closely at the case made by the author for his fundamental propositions. I shall discuss it entirely with reference to a closed system, only alluding briefly at the end to the three chapters (4, 5 and 7), carefully worked out if not very conveniently interposed in the stream of the main argument, in which account is taken of international complications.

Professor Mints starts, rightly in my opinion, by distinguishing two types of unemployment which he does not claim that a correct monetary policy could avert, though it would be helpful, in varying degree, in keeping them at a relatively low level. These are the "frictional" unemployment due to shifts in demand and technique and the "monopolistic" unemployment due to persistently excessive wage demands. His main concern is with the "depression" unemployment which can fairly be described as due, proximately at least, to failure of aggregate monetary demand. His treatment of this phenomenon is congenial to the present reviewer in two respects. First, he casts doubt, as many others have done, on the claim of the "stagnation theorists" to have established that an insufficiency of aggregate monetary demand must be regarded as a *chronic* feature of a modern wealthy industrialised society. Secondly, in examining the medicinal effects of a plethora of money, he declines to follow Keynes in concentrating almost exclusive attention on the sequence of events through the bond market. Additional consumption—especially now that the purchase of durable goods figures so largely in "consumption"—and additional capital outlay are, he emphasises, for many eco-

nomic subjects direct alternatives to both the holding of additional money and the holding of additional bonds; and conversely for the effects of monetary stringency. There follows from this approach a straightforward account of the normal behaviour of the rate of interest contrasting favourably, in my view, with that which can be painfully reached through distortion of the natural meaning of the term "liquidity preference." There follows too a needed rehabilitation of the Marshallian K at the expense of a "consumption function" and an "investment function" too easily, and sometimes with such woeful results, treated as stable or independent.

But when all this is said, I must regretfully record my opinion that Professor Mints is animated by too thoroughgoing a reaction against the notion of stagnation and too optimistic a view of the efficacy of monetary action even in the extended sense in which (it must be remembered) that term is to be understood. Most students, I think, are ready to admit a certain degree of asymmetry in this matter, enshrined in the old adage that you can prevent a horse from drinking by keeping him from the water, but that you cannot rely on being able, by leading him to the water, to make him drink. Not so Professor Mints; he is quite confident that by the steadfast application of some monetary rule the state of business expectations could have been so steadied as to nip in the bud even those slumps which in fact proved most violent or profound. The question is obviously too complex to argue in a brief review; but Professor Mints seems to me altogether to overestimate the purely "psychological" as compared with the *structural* elements in the causation of cyclical change. Bearing in mind the inevitable lumpiness and discontinuity of the process of capital formation in the modern age, with its flood of successive inventions requiring embodiment in large expensive long-lived instruments of production, habitation and transport, one does not need to be a chronic stagnationist to descry the probability of the occurrence of *temporary* saturation in important lines of investment, threatening grievous dislocation in other parts of the industrial field. And it is precisely if one is *not* a chronic stagnationist that such conditions seem to call, not so much for a permanent transfer (stimulated by budget largesse) of the factors of production from constructional to consumptive uses as for the organisation of collective acts of capital outlay to take the place of the private acts which have temporarily sagged away. The present reviewer is not, he hopes, unduly "sold on" what he was describing as long ago as 1926 as "the once heretical but now perhaps over-respectable policy of 'public works,' " nor unmindful of its difficulties; but he remains of the opinion, formed a dozen years before that, that it has a legitimate and important part to play in anti-cyclical policy. Professor Mints's uncompromising rejection of all such expedients seems to me no less tinged with fanaticism than the claims of those who twenty years ago were hailing them as an infallible panacea.

I must turn to his second main proposition, and select for discussion two of the many interesting points which it raises. First, how far does the record justify his gloomy appraisal of the prospects of obtaining competent "discretionary" management of the money supply? His castigation (pp. 44-46 and 128-29) of the alleged supineness of the Federal Reserve authorities in the

early phases of the 1929-32 slump will surely arouse some controversy from those better equipped to conduct it than is the present reviewer. Here anyway, to set beside Professor Mints's verdict, is that of a wise man[1] whose long connection with the System does not inhibit him from drastic criticism of its handling of the preceding stock market boom. "After the collapse of the market the Federal Reserve System acted with resolution to absorb the shock. Rates were reduced, securities purchased in the market. . . . Throughout the succeeding seven-year period the Federal Reserve carried on a policy of montary ease interrupted only by a brief period of stringency in the autumn of 1931. . . ." Professor Mints is, I think, on firmer ground in his charge that "stabilisation of the price of government bonds is as bad a policy as could be conceived, and yet since 1942 the Board has apparently followed this policy to the exclusion of all other considerations" (p. 132). More generally, the growing subordination of central banking authorities to Treasury needs and sectional pressures cannot but impair confidence in their ability to deal adequately even with that side of the horse-and-water problem with which they are on the face of it the better equipped to deal.

But secondly, as already stated, Professor Mints ends by interpreting in a rather surprising way his prescription (p. 131) that "it is by means of a definite, unambiguous, non-discretionary control of the stock of money that most can be done to stabilise business expectations." It is not, after all, either the size of the stock of money or its rate of growth that is to be laid down by law, but only the principle that the size of the stock is to be so operated on that the general level of wholesale prices is in fact kept stable. Easier said, surely, than done, whether the chosen instrument is to be the budget or the banks or a combination of the two. So large an element of discretion and judgment, many will feel, has seeped back into the programme that we might as well be hanged for a sheep as a lamb and allow the Authority, whatever it be, to take account of other things than the level of commodity prices.[2]

Concerning Chapters 4, 5 and 7, I must content myself with recording that Professor Mints undertakes an elaborate study of the interaction of various types of international exchange arrangements with various methods of compiling the price index number selected for attempted stabilisation. He concludes that a system of independent monetary standards, linked by mobile exchanges and each operated so as to stabilise a combined index of domestic and international wholesale prices, would reduce to a minimum the inevitable

[1] E. A. Goldenweiser, *Monetary Management* (New York, 1949), pp. 54-56.

[2] In condemning the Committee for Economic Development for their backsliding in supplementing their automatic "stable budget" policy by provisions for discretionary central banking action, Professor Mints seems to me to give a wholly misleading impression of the Committee's actual proposals. "When inflation threatens, they would have the central bank buy government bonds from the banks" (p. 172, line 4). A paradox indeed! But what the Committee *say* they want to happen when inflation threatens is that *the Government* should use its surplus to redeem its bonds held by the banks, and that the Federal Reserve should *sell* government bonds in the open market (*Monetary and Fiscal Policy for Greater Economic Stability*, p. 36). A very different story! Even the printer seems to have smelt a rat, for in line 5 he has put "inflation" where Professor Mints must have written "deflation."

disharmonies between the requirements of external equilibrium and internal stability.

Each of us, I suppose, evolves his views on policy out of his own private blend of optimism and pessimism. Professor Mints's particular blend seems to me rather an odd one, unduly coloured by his over-riding phobia of the State as enterpriser. But I think he is right to be disquieted at much that he sees being done (and taught) around him; and I hope I have not failed to convey the impression that his book deserves respectful attention from many who will find difficulty in swallowing all his conclusions.

D. H. ROBERTSON

Trinity College, Cambridge

Money and Banking; Short-Term Credit; Consumer Finance

Money, Income and Monetary Policy. By EDWARD S. SHAW. (Chicago: Richard D. Irwin. 1950. Pp. xvi, 661. $5.00.)

This is an intermediate level money and banking textbook of real substance and intellectual standards, aimed at serious students and analytically minded teachers. Professor Shaw faces up directly to the hard job of relating money and monetary institutions to the levels of income, employment, and prices; this is the core of the book. The tone throughout is analytical, with an orientation toward public policy. And it is a joy to report standards of analytical rigor that are lacking in most of the current money and banking texts.

Something less enthusiastic, unfortunately, has to be said about the book's likely appeal to students and its promise as a device for stimulating independent undergraduate thinking about monetary problems. This is partly because the formal apparatus often seems over-elaborate so that what is fundamental does not stand out; and partly because the policy analyses, which are the goals toward which the student is built up, too often fail to make obvious use of the preceding refined analytics. This partial failure to provide an explicit bridge between the formal theory and policy analyses, and to emphasize problem-oriented use of the theory, seems to me a serious drawback—but in fairness to Shaw I must add that it seems to me a still greater weakness in nearly every competitive text.

The book has three sections. The first deals with the mechanics of money and modern monetary institutions, with particular reference to the supply of money and other liquid assets. The second analyzes the flow of money expenditures (national income and prices), primarily but not exclusively from the monetary viewpoint, and considers various public policy measures for improving and controlling this flow. The third applies a similar procedure to the area of international monetary relationships and their interactions with domestic incomes, prices, and stabilization policies.

The most novel part of the book is the first section, which, logically, approaches the whole process of money creation and extinction through the balance sheets of commercial banks, Federal Reserve Banks, and the Treasury. Through this approach, the whole inter-related structure of money, liquid assets, and the debt accounts of private borrowers can be developed.

Central bank policy is thus seen as largely a problem of affecting the asset and liability structures of the commercial banks. The impact of gold flows on the money supply, *e.g.*, is treated in the same way.

This systematic "asset-liability" approach to monetary analysis is welcome, and in my judgment further examination of non-banking firms from this, as well as from the usual income approach, would be helpful in analyzing the effects of monetary policy and in clarifying our thinking about the theory of the firm in general. There is little attention to the institutional details of bank operations *per se*, but Shaw presents a detailed analysis of the commercial banks' earning assets as the focal point of monetary fluctuations and of governmental controls over the money supply. This "balance sheet" approach will be novel to many economists and the use of technical terms seems here and there unnecessarily unique. But Shaw's treatment provides insights and realistic understanding that should be helpful to many teachers who have not worked directly in the banking-central banking process, as well as to hard-working students.

Section II is a serious attempt to integrate monetary analysis with income flow analysis of the level of national income and employment. Here again the task of the reviewer is difficult. Professor Shaw has had the courage to sail into this still-uncharted sea, and he obviously knows his business. The result is the best job in the current textbook literature, possibly equalled only by Hart's *Money, Debt, and Economic Activity* in a quite different way. If it is, nevertheless, still less than satisfactory and the two approaches still emerge by and large separate, the blame must fall in part on the fact that a really satisfactory integration is yet to be achieved at the treatise level. In part, though, the above-mentioned tendency toward elegance and completeness for its own sake is also responsible. As a result, the section's teaching usefulness may not live up to its analytical quality if a main goal in teaching is development of independent student problem-sensing and problem-solving abilities.

Moving on to the area of monetary (and fiscal-debt) policy, Shaw's statement of the "functional finance" (fiscal policy) approach and his survey of monetary policy in the United States since 1914 deserve special praise as penetrating and compact. These same adjectives may be applied to the entirety of Section III, on International Monetary Relationships, roughly a quarter of the entire volume and in my judgment the most superior part of the book.

Since this is clearly a book to be judged by intellectual standards above those applied to most texts, it may be appropriate to comment on four points of analytical substance.[1] First, Shaw's analysis of the impact of the money supply on economic activity primarily through interest rates (especially Chapters 12-14) seems to me to be questionable in emphasis. This channel may well be important in many instances, and Keynes' long-accepted *Treatise* argument that the government can hope to have little effect on long rates has now little weight. But most of the evidence suggests to me that the direct

[1] And to mention one important slip, or very peculiar definition in light of the analytical techniques of the rest of the book and of the general literature: "Disequilibrium is a shorthand expression for unemployment or for inefficient employment of scarce resources, and it also carries implications of inequity in the distribution of incomes" (p. 495).

impact of changing liquidity and availability (rationing) of capital funds on business and consumer behavior is the more important channel. Second, the oneness of monetary and debt policy, while recognized, seems to me to deserve fuller emphasis as a fundamental characteristic, at least for some years ahead, that requires a basic re-examination of the usual approach to monetary policy analysis. This implies an inseparability of the "economics" and "politics" of monetary and debt policy-making that neither Shaw nor most other monetary economists seem to me to recognize sufficiently. Third, Shaw's analysis of bank supervision and federal deposit insurance (Chapter 5) seems to me not to penetrate into what the real rôle of individual bank supervision is or may be, and not to recognize the fundamental dependence of any such deposit insurance plan on central bank and Treasury system-wide liquidity policies in periods of serious strain. Lastly, the equality of *ex ante* savings and investment as a sufficient condition for income stability (pp. 341-42, 496) seems to me to be undemonstrated. Perhaps Professor Shaw has just not made all his assumptions clear, but given numerous types of consumption functions, it is clear that income may vary from one period to the next even though *ex ante* investment and savings are identical. But by and large Shaw's layout of the monetary area is admirable and the analysis very superior. The book is one every teacher of an analytically oriented money and banking course will want to consider.

G. L. BACH

Carnegie Institute of Technology

Term Loans and Theories of Bank Liquidity. By HERBERT V. PROCHNOW. (New York: Prentice-Hall. 1949. Pp. 444. $7.50.)

The increasing importance over the past fifteen years of term loans in the portfolios of commercial banks and insurance companies makes this a particularly timely study. Laying primary emphasis on the practical aspects of term loans, Mr. Prochnow treats of such topics as the characteristic features of term loans, the credit risks involved, the provisions of term loan agreements, and the principles of term loan extension. A number of illustrative case studies are included. Chapters are added, written by experts in the field, on the legal aspects of term loans and on insurance company term loan practices. The detailed study on term lending to business in 1946 by Duncan McC. Holthausen is reprinted from the *Federal Reserve Bulletin*.

The author sets forth the advantages of term loans both to the lending bank and to the borrowing concern. These advantages are so real that term loans promise to become a permanent feature of American lending practice. Term loans are superior to loans, ostensibly short but subject to frequent renewal, and superior to bonds or debentures payable in one lump sum.

Many of the term loans now in the portfolios of American banks would in an earlier period have been represented by debentures and mortgage bonds. It was the unprecedentedly low money rates of the early 'thirties brought about by the huge volume of excess reserves, which induced banks to enter this field and burdensome registration requirements and the flexibility of the term loan which made the borrower a willing customer.

The public policy aspects of this type of lending, involving the appropriate relationship of commercial banks and commercial banking to the capital markets, remain to be explored. Following the breakdown of the banking systems of Belgium and Germany in the Great Depression, the trend in Europe has been away from the capital loan. British commercial banks have never adopted this technique and the Canadian banks, which adopted the practice following World War II, have recently desisted from making such loans as an anti-inflationary move. A wealth of practical background for an investigation of the public policy aspects of term loans and of their theoretical implications is provided by Mr. Prochnow's volume.

B. H. BECKHART

Columbia University

Business Finance; Investments and Security Markets; Insurance

Introduction to Investments. By JOHN C. CLENDENIN. (New York: McGraw-Hill. 1950. Pp. viii, 604. $4.75.)

Teachers Manual for Introduction to Investments. By JOHN C. CLENDENIN and PRESLEY C. DAWSON. (New York: McGraw-Hill. 1950. Pp. 107.)

As the title implies, this is an elementary textbook on investments, intended primarily for the college student, but brief and pointed enough to be understandable by those who have an interest in the subject. It is oriented toward personal rather than institutional investment problems and gives some attention to non-security "investments" (life insurance, savings bank deposits, etc.) that make the approach realistic and personally significant to the average student.

In subject matter, scope, and point of view the book follows the standard pattern in the main. The author has sought—successfully, I think—to make investment principles and problems understandable to the beginner; yet the treatment is meaty and compact. The main qualities of the book are its clarity of expression, its economy of words, and its generally good balance and perspective. It is divided into four main parts dealing with the investment characteristics of corporate securities, the securities markets, security analysis, and related topics such as savings institutions, taxation and portfolio administration. The approach is solidly practical. For better or worse there is little emphasis on what might be called the economic side of investments: capital or interest theory, bank credit, business cycles or the reciprocal relationships between investment and the economy at large. It has the imprint of the market place rather than the ivory tower, and will appeal to those who want to embark upon the study of investments without adornment or complications. Theorizing is reduced to a minimum.

The author's experience as a college teacher and as a research consultant to the Los Angeles Stock Exchange is apparent. He shows that he has grappled with investment problems at the ground level, and his observations are direct and to the point. Brief illustrations here and there are appropriate and not overdone. As might be expected, there is some emphasis on the organization,

mechanics and behavior of the securities markets, and market price as an investment factor is kept constantly in mind.

Following the practice of most current textbooks, considerable space is given to the analysis of corporate securities in different industries, a chapter being devoted to each industry. These chapters reveal a good grasp of the important investment problems in each field, and while they are not filled with minute instructions or detailed procedures, the reader gains a definite notion of what to look for in each case. Here, as throughout the book, detail is sacrificed for scope. Those who think of investment analyses as a series of isolated mechanical operations or computations may find too little of that in these chapters. On the other hand, those who would emphasize perspective rather than details will applaud this treatment and find it adequate.

The excellent composition of the book is noteworthy; the type is clear and easy to read, headings are distinct, and footnotes are brief and few in number. The author has not succumbed to the temptation to use a textbook as a means of impressing his contemporaries with his erudition—in fact he seems deliberately to have refrained from including the extensive documentation that he undoubtedly has at his finger tips. A few charts (15) and tables (57) are judiciously used, and on the whole are understandable and helpful. At the end of each chapter there is a list of questions—some very simple, some searching—and a few references to standard textbook sources.

Some teachers of courses in investments might prefer a more complete treatment of such topics as alternative investment policies and problems of institutional investment, and might like more emphasis upon the broader economic forces as they affect private investments. But one cannot have both reasonable brevity and full coverage in a single elementary book. Perhaps no two people would agree exactly about the content and emphasis of any textbook and there is reason to believe that the balance here may be as good as any for what the author seeks to achieve.

Questions might be raised about minor points: Did Congress intend that the Investment Company Act of 1940 should make investment companies "a safe place for the savings of small investors" (p. 275)? Are the largest corporations in an industry usually the most profitable (p. 288)? Is the Dow theory really useful (p. 226)? Is interest coverage of 4 to 6 times necessary (p. 144) or is 2 or 3 times adequate (p. 314)? Does the average stockholder investment pay less than the 2.9 per cent yield on a Series E bond (p. 93)? Should the average family portfolio have 50 per cent invested in equities (p. 16)? Is life insurance a profitable investment (p. 478)? But most of these would be questions of emphasis, semantics and value judgments, about which there can be rational differences of opinion. The reviewer has found few instances in which he would take serious issue with the author.

For those who are interested in a practical text for introductory college courses or extension courses where students can be presumed to have some background in finance and a knowledge of elementary accounting, this book should have a definite appeal. It is up-to-date, concise, realistic, and competently done.

The teachers manual is designed to be used with Clendenin's *Introduction to Investments*. It contains several teaching aids such as suggestions for teaching each chapter; it supplies the correct answers to the questions in the textbook; and it provides extensive lists of objective questions (true-false and multiple-choice) for each chapter.

Experienced teachers will find here some helpful hints, some new insights, and some usable examination questions. It will be a time-saver for them. But it will be particularly useful to those who are just beginning to teach this complex and widely ramified subject and feel the need of an experienced guiding hand.

The senior author has also compiled a separate set of about 20 practice problems to be used with his text and the manual. These are designed as major assignments in comparative investment analysis. The advantage of these problems is that they bring together data from the usual sources and apply them to realistic investment problems. They are in mimeographed form and may be obtained from the author.

CHELCIE C. BOSLAND

Brown University

Public Finance

Creation of Income by Taxation. By JOSHUA C. HUBBARD. (Cambridge: Harvard University Press. 1950. Pp. xi, 239. $4.00.)

The first task of a reviewer of this volume is to explain what appears to be a contradiction in its title. In ordinary usage, taxation is considered to be deflationary not expansionary—income-destroying not income-creating. Dr. Hubbard, despite the title of his volume, does not deny this proposition. Rather, the question is simply one of nomenclature; when Dr. Hubbard refers to the income-creating effects of taxation, he has in mind the combined impact of the *collection and expenditure* of the tax revenues. Unless this usage is kept in mind, many statements in the book will strike the reader as highly confusing, if not as flatly in error. Consider, for example, the following: "When economic development slows up and prolonged unemployment becomes a reality, the policy authority may resort to periodic higher taxation to bring about a rising income" (page 182), or ". . . the difficulty may be to avoid inflation. Then the policy authority should reduce taxes and withdraw any encouragement to private investment" (page 183).

These statements represent applications of the central theme of the book, namely, that a balanced increase in government expenditures and taxation, properly handled, has a long-run expansionary effect on the economy and a balanced reduction in the government budget has a deflationary effect. The author puts it as follows in the closing sentences of his introduction.

> The influence of higher taxes of all kinds upon consumption and investment, and of the spending of the receipts for social consumption or to expand private investment, is the subject for analysis throughout the rest of this book. It will be argued that, during unemployment, there is an

appropriate taxing and spending program which is able to achieve full employment in all situations (p. 7).

The entire book is devoted to the development and appraisal of this theme. In the first half this proposition is developed on carefully specified assumptions. The effects on national income of different types of taxes and of different spending policies are examined in detail, using a straightforward Keynesian analysis, and on a variety of assumptions for different schedules of the propensity to consume and the marginal efficiency of capital. The second half of the book relaxes the rigorous assumptions under which the preceding theoretical analysis was developed and examines the merits of "income creation by taxation" as a practical policy in comparison with leading alternatives, especially that of deficit financing. Dr. Hubbard concludes on this point that deficit financing has an important contribution to make in the short run but that his policy of "taxation to create income" is to be preferred in the long run. He is especially critical of long-run deficit financing under conditions of very slow technological progress.

The central theme that an increase in the size of a balanced budget has potential expansionary effects is of course not novel. (One of the pioneer articles on this subject was in fact published by Dr. Hubbard in 1944, and the present volume is an elaboration and extension of the contributions made in this article.[1]) In this volume, however, Dr. Hubbard undertakes a much more exhaustive theoretical analysis of the proposition than has hitherto been attempted. The main contributions of the book lie in this analysis.

When Dr. Hubbard departs from a strict deductive analysis, based on Keynesian models, his treatment strikes this reviewer as being less balanced, and hence his conclusions less reliable, than his purely theoretical analysis. For example, the author concludes at one point that: "To maximize the income created by a given tax, the tax outlay must be devoted to consumption when the schedule of the marginal efficiency of capital has an elasticity less than unity, while the tax outlay must be loaned and invested without interest when the elasticity is greater than unity" (pp. 78-79). There is, however, little discussion, here or later in the book, of the feasibility of determining the elasticity of the schedule of the marginal efficiency of capital. Likewise, the political feasibility and profound social and economic implications of having the government make large loans to private individuals or companies free of charge are not examined. Yet many of the author's conclusions depend in large part on the feasibility and economic and political wisdom of adopting this policy on a very large scale in order to stimulate private investment.

Similar questions arise at many places in the latter part of the book. A noncritical reader could easily obtain an exaggerated impression of the finality of Dr. Hubbard's conclusions for policy purposes because of his failure to stress their indirect effects, the practical difficulties of carrying out his proposals, and their far-reaching social and political implications. Nonetheless, Dr. Hubbard has made a contribution in carrying the theoretical analysis of

[1] Joshuá C. Hubbard, "Income Creation by Means of Income Taxation," *Quart. Jour. Econ.*, Vol. LVIII, No. 2 (Feb., 1944), pp. 265-89.

the expansionary effects of a balanced increase in taxation and expenditures further than has hitherto been attempted and in presenting a preliminary—though highly incomplete and hence in some respects misleading—discussion of the policy implications of this proposition.

J. KEITH BUTTERS

Harvard University

Taxes, the Public Debt, and Transfers of Income. By DONALD C. MILLER. (Urbana: The University of Illinois Press. 1950. Pp. xi, 153. $3.00.)

The extensive inquiry suggested in the foregoing title is limited in the work, which was first submitted as a doctoral dissertation, to a consideration of the transfers made in 1945 by the collection of the amount of tax revenue needed for the cash payment of interest on the national debt. But the task, even though reduced by the acceptance of that objective, remained large.

The procedure followed was first to examine the degree of progressivity in the federal tax structure. To that end, individual chapters were devoted to the personal income, corporation, social security, excise, and miscellaneous taxes. The payments made under these imposts, however, were not necessarily taken to be the actual outlays of the taxpayers. The possibility of shifting was examined, and the payments allocated on the basis of their assumed incidence. It was thought impossible to shift the personal income tax within the period of one year. Consequently the entire amount of the revenue was assigned to the taxpayers. The burden of corporation taxes was regarded as less certain. Two assumptions were made: (1) that the taxes were borne by the stockholders in proportion to their dividends; and (2) that only two-thirds rested on this group, the remainder being passed forward to consumers in the form of higher prices. The taxes paid under the social security legislation by employees were allocated to them, and by employers one-third each to them, to employees, and to consumers. The excises and the customs were assumed to be shifted forward, and accordingly were distributed on the basis of consumer expenditures. The estate and gift taxes were assumed to be paid by persons with incomes of more than $5,000. On the basis of the foregoing allocations, a master table was then constructed showing the amount of each tax and the total of taxes paid by six income groups beginning with below $1,000 and ending with more than $5,000.

The second division of the study undertook to allocate among income classes of individual investors an estimated cash interest payment of $2.8 billion on federal obligations whether acquired by direct purchase, or indirectly through the ownership of stock in corporations, the payment of premiums to insurance companies, or the making of deposits in commercial banks. All such indirect receipts were held to arise from the ownership of federal bonds by the institutions mentioned.

In the concluding chapter, the two master tables—the one of tax payments, the other of interest received—were compared. On the assumption that all taxes on corporations were paid by the stockholders, it was found that 56 per cent of the revenue required to pay the interest on federal bonds came from persons with incomes of more than $5,000, and that this same income group received 59 per cent of the interest. Thus out of a total collection and distribu-

tion of $2.8 billion; only $87 million was transferred from groups with incomes below $5,000 to those with incomes of more than that amount.

Under the assumption that the stockholders paid two-thirds of the corporation taxes and consumers one-third, the percentage contributed by persons with incomes of more than $5,000 declined to 50, and the transfer to them increased to $239 million.

The study shows a wide acquaintance with sources and a respect for the qualifications that attach both to assumptions and to statistical data. The earmarks of thought and of objectivity of treatment are present. Although not subscribing fully either to the analysis or to its significance for the year selected, the reviewer recognizes in the closely packed content of this little book a substantial achievement.

M. SLADE KENDRICK

Cornell University

International Economics

The Economics of Freedom. By HOWARD S. ELLIS, assisted by the Research Staff of the Council on Foreign Relations. (New York: Harper & Brothers, for the Council on Foreign Relations. 1950. Pp. xviii, 549. $5.00.)

As is indicated by the subtitle, "The Progress and Future of Aid to Europe," the concern of this volume is the effectiveness of the European Recovery Program, and what is to come after. Consistent with the past work of Professor Ellis, it is scholarly and analytical in character, carefully dissecting particular problems and probing the implications of alternative remedies. This analytical approach compensates in considerable part for the onrush of events, which are bound to outdate any book addressed to a topic of current interest. Though altered by the Korean war and by the defense effort, many of the problems considered will remain with us, and the solutions offered will continue to be the subject of debate. There is therefore good reason to believe that the hope expressed by General Eisenhower in his foreword will be realised —"That Dr. Ellis' report will serve to furnish the basis for intelligent and free discussion of a subject of increasing importance to this country and to all the world—American economic policy."

The plan of attack adopted divides the book into four sections. Part One provides, in relatively brief compass, the economic setting of the European Recovery Program, and stresses this program as "first and foremost an investment project" aimed to rebuild and expand Western Europe's capital plant and equipment. The inflationary impact of this program is clearly indicated, together with the implications for structural change which reside in the increasing reliance in Europe upon government financing of investment. As for the balance-of-payments problem, whose consideration carefully unfolds the various alternative solutions, principal reliance is placed upon resolving the very real "import deficit" of the United States by a further reduction of our tariff, which *"has essentially been an anti-European tariff."*

Part Two shifts attention from the general to the particular with closely reasoned and informative chapters on the position and prospects of four prin-

cipal Western European countries—the United Kingdom, Western Germany, France, and Italy. In each the dominant rôle of investment in the reconstruction effort is featured, together with certain special aspects of each country's problems—in Britain the burden of unrequited exports, in Germany the task of absorbing some nine million refugees, in France the weakness of the tax structure, and in Italy the constant unemployment resulting from population pressure.

Part Three turns to a detailed consideration of European economic cooperation. Though agreeing that the creation of a unified competitive market would yield "substantial gains in productivity," Professor Ellis cautions against excessive optimism either as to the size of the gains or as to the prospects of rapid progress toward closer integration. The gains of cooperation are future and general, its costs immediate and specific. "As a result it has a high political visibility."

The real solution to Europe's problem of becoming self-supporting—a great extension of its trade with the rest of the world—is discussed in Part Four. Even successful integration of Western Europe holds less promise than global reduction of barriers, because of that region's dependence on the rest of the world. The American policy of expanding multilateral trade best fits Europe's needs; coupled with a really significant Point Four program of investment in undeveloped areas and with effective stabilization of the U.S. economy, it offers the best hope for the elimination of Europe's international deficit when Marshall aid ceases in 1952.

It is difficult to quarrel with the general conclusions of this book, or with the analysis by which they are reached. The intelligent layman, however, to whom it appears to be addressed, will not find it easy going. Some parts are rather technical and for a novice, difficult; the rather large amount of detail and concern with specific as contrasted with general issues may prove distracting and hinder his comprehension of the salient features of Western Europe's position. Yet a serious and inquiring reader, willing to devote time and effort to the study of one of the most significant problems of his day, can acquire much enlightenment. Instead of the more common superficial discussion, he will find here a thorough and judicious analysis which lays bare the complexities of Western Europe's situation and which can be consulted with confidence on a wide range of specific issues. It is well to have at least one such volume available.

P. T. ELLSWORTH

University of Wisconsin

Report to the President on Foreign Economic Policies. Prepared by GORDON GRAY, Special Assistant to the President, EDWARD S. MASON, Deputy, and Staff. (Washington: Government Printing Office. 1950. Pp. 131. 40¢.)

In this outstanding report, former Secretary Gordon Gray and his special staff present a carefully chosen set of foreign economic policies for the United States in the fourth year of the cold war, expounded in terms of the state of world affairs in the autumn of 1950; and mortised into the relevant political

and military policies of this government. All this is accomplished in the scope of a mere hundred pages of text, supported by some 29 well selected tables.

A striking feature of the report is its positive tone. It begins with the assumption that our basic foreign policy objective of a just and lasting peace "cannot be attained by negative measures." From this it goes on to propose and defend an integrated foreign economic policy which clearly recognizes and meets the principal difficulties which confront us in the immediate future.

Had it not been for Korea and the magnified defense effort spurred thereby, aid to Western Europe and Japan could probably have been terminated in 1952. Our major efforts in the foreign economic field could then have been concentrated on the long-run tasks of continuing with the restoration of a relatively free international trading system and of aiding the economic development of less fortunate peoples. But Korea, rearmament, and increased international tension have changed all that. They mean a heavy burden on Western Europe from the outlays imposed by our joint defense effort, an intensification of the urgency to show that the western world can offer real relief to the poverty and stagnation of underdeveloped areas, and a new problem of increasingly scarce supplies of vital goods and materials.

The Gray Report meets these challenges positively and constructively. Recognizing that there is a distinct limit to the sacrifices Western Europe can make in assuming the obligations of joint defense, it proposes that we extend such aid as may be needed, in addition to military equipment, for another three to four years. To achieve essential social and economic progress in underdeveloped areas, the Report places principal reliance upon an expanded technical assistance program, needing some $500 million a year for several years, and upon public lending of $600-800 million a year by the International Bank and the Export-Import Bank. To avoid a senseless scramble for scarce materials and goods badly needed here and abroad, international collaboration in their allocation is stressed. Nor is the long-run goal of freer multilateral trade forgotten: this is to be pursued by many specific measures, including continued cooperation in lowering trade barriers, simplification of U.S. customs procedures, at least temporary unilateral reduction of tariffs on scarce commodities, and suitable changes in our agricultural and shipping policies.

Worthy of particular note is the skepticism of the Report toward private investment as the bulwark of economic development. In view of the deterrent effect of international tension and, in some areas, of outright hostility toward foreign capital, and of the attraction of high domestic rates of return, it regards (soundly, in the reviewer's opinion) continuation of the postwar flow of some $800 million per annum of private capital as the probable maximum, with the likely figure perhaps "substantially short" of this. Another good point is the recommendation that we abandon the policy of tied loans, on the ground that it is unsuited to our needs in an inflationary period, and of little effect anyway except on the composition of our exports. Finally, the Report gives in a nutshell an excellent defense for liberalism in our trade: "This Nation has nothing to fear and much to gain from liberal trade import policies."

P. T. Ellsworth

University of Wisconsin

Die Selbstregulierung der Zahlungsbilanz. Eine Untersuchung über die Automatischen Methoden des Zahlungsbilanzausgleichs. By EMIL KÜNG. (St. Gallen, Switzerland: Verlag der Fehr'schen Buchhandlung. 1948. Pp. x, 256. Sw. fr. 25.-.)

Professor Küng's essay deals with the ways in which a balance of payments disequilibrium may be adjusted without quantitative restrictions, bilateralism, etc. Reviewing the work done so far he first assays the effectiveness of the various automatisms of adjustment, and, secondly, synthesizes the work of his predecessors, thereby adding to our knowledge. His procedure has, roughly, the following structure: he discusses the classical quantity-of-money-price-level-adjustment; continues with the modern transfer-of-purchasing-power theory à la Ohlin, goes on to the mechanisms of interest rates and equilibrating capital movements— and proceeds finally *via* a discussion of fluctuating exchanges to a synthetic presentation of the various aspects of the problem. The last two substantial chapters are devoted to dynamic conditions.

As must be expected, this book like every book has its strong and weak points. The strong points lie in the great detail into which Professor Küng carries his analysis. In fact, this is sometimes even confusing because, in his attempt to deal with every aspect of the problem, Professor Küng frequently goes outside his original assumptions and discusses, say, multiplier effects or abnormal capital movements in the contexts of full employment and long-run equilibrium. Of course, there is method in this, for it is Küng's way of discussing the limits of a particular process of adaptation. Nevertheless, it also reveals a weakness of his approach which I shall try to sketch presently. For American readers the all-too-brief sections (pp. 48-56) on the interlocal movement of funds based on Lösch (Räumliche Ordnung der Wirtschaft) and Hayek (Monetary Nationalism and International Stability) should be of particular interest, since these aspects are traditionally rather neglected in Anglo-Saxon discussions.

The weakness of the book lies in the fact that Professor Küng nowhere seriously undertakes to show the *quantitative* conditions necessary for the attainment of equilibrium. There is no discussion of stability conditions in connection with the multiplier, and not more than hints as to the elasticity conditions necessary to make devaluation (for example) an effective means of eliminating a disequilibrium. Only towards the very end does Küng mention that "domestic elasticities may be such that a devaluation will not activate the balance on current account. Tinbergen gives certain graphic and empirical data, but it is not clear how much they prove."[1]

Now it can be commented that in a basically theoretical book the question whether a certain constellation of elasticities exists in reality is not really relevant. Nor do I wish to be particularly critical. The reason why Dr. Küng's essay actually suffers from the absence of a clearcut quantitative discussion and from the absence of a schema such as Metzler gives in his *Transfer Problem Reconsidered*[2] is that it has forced Dr. Küng into an unnecessarily clumsy

[1] Küng, p. 250. The translation is correct though not literal.

[2] *Journal Political Economy,* June, 1942.

originality. Actually the last two chapters deal with much the same complex of questions as Metzler's article. They go much beyond Metzler in dealing not only with balance-of-payments adjustments through movements of output and employment, but also through the classical and neo-classical mechanisms. Dr. Küng has many interesting things to say on the limitations of the effectiveness of, *e.g.*, the transfer-of-purchasing-power mechanism during a business cycle. It is for this reason that one notes with regret the absence of a quantitative schema which would have made it possible to be more concise and which would have changed a collection of many interesting and suggestive points to an overdue original contribution.

W. F. STOLPER

University of Michigan

Bretton Woods en het Internationaal Monetair Bestel (Bretton Woods and the International Monetary Order). By H. J. STOKVIS. (Leiden: H. E. Stenfert Kroese. 1948 Pp. 448.)

Do the Bretton Woods proposals point to a new monetary standard? How do they relate to the gold standard? Is the International Monetary Fund a Central Bank of Central Banks? These are the main questions to which this book, a thesis at the Rotterdam School of Economics, is devoted. Chapter I on the theory of the gold standard, Chapter II on the development of this theory in the interwar years and a few sections of Chapter III on the Bretton Woods proposals carry the analysis which leads up to an answer to these questions. Especially in the latter part, however, this analysis gets somewhat lost amidst a running translation into Dutch of the Keynes Plan, the White Plan and the Articles of Agreement of the Fund and Bank, plus a commentary on all this which leans heavily on Halm's *International Monetary Co-operation*. Another hundred pages give the complete English version of the Fund and Bank Articles of Agreement, schedules and all.

The author posits as the only meaningful concept of a monetary standard that in which there is a fixed relationship between the unit of account and a combination of commodities. The essence of a monetary standard is therefore the stabilization of a price index. But Stokvis sees this stabilization apparently not as a central bank *policy* which at times might give way to another policy in order to attain more ultimate objectives of the national economy, but as part of a super-human *"order."* (The word "bestel" which occurs in the Dutch title is hardly ever used without an adjective such as "heavenly.") Thus he writes that the central banks must not be able to influence the monetary standard (p. 21) and that a standard which can be managed is a logical absurdity (p. 38) and not really a standard (p. 90). The Goudriaan-Graham commodity standard, which links the monetary unit to a package of raw materials, is considered impure as a monetary standard because it is still linked to particular commodities and because under it the supply of these commodities can still influence the money supply.

Against this criterion of a monetary standard, the Keynes and White Plans and the Fund are obviously found wanting. "Like the Keynes Plan, the White system lacks a standard. White wanted to create an international standard

and provided a mechanism for this, but he forgot to indicate its criterion, the standard itself" (p. 273). And "a mechanism of adjustment in an international monetary system without an independent monetary standard is like a ship in a fog without a compass" (p. 90, and again, but now in quotation marks, on p. 326).

To this reviewer, the deductive and absolute criteria which Stokvis applies to a monetary standard appear somewhat far fetched. Approximate price stability is a worthwhile objective of economic policy in most circumstances, but it is not an immanent attribute of perfect money. The intense interest in price stability seems indeed to be something of the past. The absence of price stability or any similar standard among the purposes mentioned in the Fund Agreement does not indicate obliviousness on the part of its drafters; it points rather to the fact that in the 'forties and 'fifies economic policy is concerned with more ultimate economic objectives than it was in the 'twenties and 'thirties. The second purpose of the Fund would seem to provide more and better guidance to international monetary policy than could be obtained from Stokvis' standard. It states that the Fund is "to facilitate the expansion and balanced growth of international trade, and to contribute thereby to the promotion and maintenance of high levels of employment and real income and to the development of the productive resources of all members as primary objectives of economic policy."

Nothing in the admittedly short history of the Fund indicates that it was hampered in its policies by lack of a standard. Stokvis is on firmer ground when he stresses the limitation of the Fund's powers and argues that it cannot be considered as a Central Bank of Central Banks because it lacks most of the instruments of a central bank (rediscount policy, open market policy, reserve requirements).

The question whether the Fund is a reincarnation of the gold standard is essentially a sterile one, depending on what particular aspects of the gold standard and of the Fund one wants to stress. The provisions for a uniform change in the gold price and for the devaluation of individual currencies are incompatible with a gold *standard* in Stokvis' terminology and he answers his question, therefore, in the negative.

The author's attempt to interpret the main provisions of the Bretton Woods Agreements is satisfactory as far as it goes, and the resulting text provides an accurate description. The Articles are, however, as the author states in a footnote, "rather complicated" and any but the most painstaking translation is likely to lead to minor errors or to possible confusion. Thus Stokvis has apparently misunderstood the secondary repurchase provision (Art. V.7b(ii), p. 292); and when he lists the conditions in which the Fund may be used for capital transactions (Art. VI.2, p. 294), it is not clear whether these conditions have to be fulfilled separately or jointly. There is also a mistake on page 318, where the maximum initial gold and dollars holdings of the Fund are calculated as equal to the U. S. contribution plus 25 per cent of all quotas, thus counting twice the gold portion of the U. S. contribution.

J. J. Polak

Washington, D.C.

The Balance of Payments and the Standard of Living. By R. G. HAWTREY. (London and New York: Royal Institute of International Affairs. 1950. Pp. 158. $1.75.)

Here is Mr. Hawtrey's diagnosis of Britain's postwar economic situation. The preface is dated March 1950; at that time the favorable effects of the 1949 devaluation had already begun to appear. But according to Mr. Hawtrey the devaluation was a "profound miscalculation"; British exports were suffering from "delays in delivery" due to the over-employment of British industry, but not from "excessive costs" (pp. 98-99). Evidently Mr. Hawtrey's thought runs in terms of the purchasing power parity doctrine (pp. 17, 70, 101, 142); since there was no disparity in costs and prices, there seemed to him no need for devaluation. Whatever we may think of this doctrine generally, its applicability to the British case is surely open to question. The loss of foreign investments alone made a big hole in Britain's balance of payments, and in the face of a structural change of this sort price-parity calculations become largely irrelevant.

Mr. Hawtrey's case against devaluation rests mainly, however, on the ground of inefficacy. Imports are assumed to be irreducible. Because of inelastic American demand, "the dollar proceeds of British exports are reduced" and so devaluation "makes matters worse" (pp. 61-63, 127-28). Whether or not Mr. Hawtrey's estimate of elasticity is warranted, it relates only to British exports direct to dollar markets. Only in one place (p. 104) does there seem to be a recognition of the possibility of improving Britain's dollar balance through the displacement of American by British exports in third markets. Mr. Hawtrey abruptly shuts off this hopeful prospect by asserting that the resources necessary to produce additional exports are not available (p. 105), except through diversion from domestic uses, which in turn is practically impossible. In consequence, the rise in the sterling value of the dollar is expected to provoke a rise, in about the same proportion, in British wages and prices (p. 111).

The crux of the matter is the insufficiency of productive resources and the impossibility of diverting them into production for export. The picture is that of an overstrained and rigid economy. Undoubtedly it corresponds in large measure to reality; but one important feature of reality is missing: the increase in productivity and aggregate output. No one would gather from reading this book that in the years 1946-50 British industrial production increased by some 40 per cent. Here, of course, was a source of additional means available for closing the external gap without the need to divert resources from domestic consumption or investment. This source could hardly have been overlooked if the relation between the balance of payments and the standard of living had been viewed in the framework of national income analysis; but national income analysis in this book is conspicuous by its absence.

Apart from the postwar dollar problem, which is treated as a reflection of postwar re-equipment needs, Mr. Hawtrey discusses two long-range problems: a long-range dollar problem, which he regards as a serious possibility, and a "primary products problem" arising from the industrialization of underdeveloped countries. Although the latter is discussed under the heading of

"An Intractable Adverse Balance," it looks more like a terms-of-trade than a balance-of-trade problem. Whatever the exact nature of the future trouble may be, the passages dealing with the long-range weakening of Britain and Western Europe in the international economy are among the most interesting in the book (pp. 54-60). Hints are thrown out later as to the possible need for "weak" countries to discriminate against the "strong," but no clear prescription emerges.

The dominant theme of the book is the limited extent to which the price mechanism can be relied upon to rectify international disequilibria of a fundamental and persistent character. Although in the special British case Mr. Hawtrey seems opposed to any change in the exchange rate from the outset, his general position is that a rate of exchange is to be found that maximizes the foreign exchange proceeds of a country's exports; at that rate, imports being unresponsive, an adverse balance may still remain; what is to be done? In his view the main alternative remedy, for both the postwar and the long-range disequilibria, is the application of controls and restrictions. But he has nothing new to propose as regards controls and restrictions. In fact, he often seems unconvinced of their efficacy. His remarks on planning in general are quite reserved. As for exchange control, he states categorically that it "ought to be abandoned at the earliest practicable opportunity" (p. 126).

Altogether this is in some ways a puzzling book. Apart from a dig at Keynes, there is no reference to any technical economic literature. The factual evidence is somewhat scrappy; the policy conclusions are unconstructive. And yet the book is definitely of value. It can serve, on this side of the Atlantic, as an effective introduction to Britain's economic problems. It provides a useful reminder of the hard circumstances which, on the other side, have caused even so "orthodox" an economist as Mr. Hawtrey to shed some of the traditional faith in the working of market forces in international economic relations. It contains much that even the expert will find instructive. On a variety of special topics, such as suppressed inflation, state trading, sterling balances and intra-European settlements, Mr. Hawtrey produces illuminating points of information as well as of appraisal.

RAGNAR NURKSE

Columbia University

Le Controle des Changes. Rapport General. By A. PIATIER. (Paris: Conference Permanente des Hautes Etudes Internationales. 1947. Pp. 202. 250 fr.)

In August 1939 the International Study Conference met at Bergen to discuss the broad topic "International Policies and Peace." A series of reports dealing with exchange control in various countries of Europe and Latin America had been prepared for the conference.

Mr. Piatier summarizes in his book the findings of this foreign exchange inquiry, draws general conclusions based on the experience with exchange control in various countries, and finally attempts to analyze critically the whole problem of exchange control. His report was written in 1939. After

the war it was decided to have it published despite the profound changes which had taken place in the world economy, perhaps mainly for the reason, as the author says, that exchange control systems established during and immediately after the war have not added any new elements to the technique of monetary management.

In addition to this general and very good book by Piatier, the International Study Conference published very useful reference monographs dealing with the exchange control in Latin America, Argentina, Germany, and Bulgaria. Two more volumes will cover other countries on the European continent, the United Kingdom, Japan, and New Zealand.

In the general report Mr. Piatier discusses in broad terms the problems of the exchange rate and exchange control, and the balance-of-payments equilibrium. It is interesting to note his distinction between the balance of accounts and the balance of payments which has frequently been used by French economists. Balance of accounts (la balance des comptes) is defined as a total of claims and debts of a country during a period of a year, showing a surplus or a deficit. The balance of payments includes the balance of accounts plus new placement of foreign capital in a country and the country's placement of capital abroad during a period of one year. While equilibrium is the rule for the balance of payments, it does not apply for the balance of accounts.

The book deals with the various forms and stages of exchange control from the exchange equalization account to a complete control of exchange transactions and exchange rates. What had been contemplated as a temporary exchange measure to protect a country's balance of payments was transformed step by step into an instrument to control and regiment the national economy, and into a weapon of economic warfare. Since 1939 several books have been published in this country which discuss in detail various aspects of exchange control in Europe, especially in Germany. Their findings and conclusions agree mostly with those found in Piatier's report.

At the end of his thorough analysis the author asks two important questions related to the function and justification of exchange control. The first—Can exchange control maintain the stability of the exchange rate?—is answered in the negative. Exchange control cannot be separated from a slow process of devaluation and becomes a simple instrument of exchange rate adjustment. It does not cure the causes of a balance-of-payments disequilibrium; it deals only with its symptoms. Equally negative is the answer to the question as to whether exchange control can protect a country's economy from fluctuations of world economy, an objective which was pursued and formally proclaimed by Germany during the Schacht regime. As the author rightly remarks, it is impossible to receive advantages from world prosperity without being subjected to the effects of world depression.

Exchange control as established in the 'thirties does not represent a new monetary system, and its unfavorable effects outweighed its positive results. In conclusion the author expresses the view which was very common in the immediate postwar period that exchange control may and will be abandoned

once the policy of economic nationalism is replaced by real international economic cooperation.

The main conclusions of the report appear convincing. However, the basic statement that the exchange control systems established since 1939 have not added any new elements to the technique of monetary management needs to be qualified. New problems have emerged which require perhaps a different treatment. Further studies in this field are necessary to re-examine, for instance, the policy of full employment or the policy of development of backward areas in their relation to the monetary and exchange systems or to explore the possibility of using the device of planned balance-of-payments deficit under the free exchange system.

A. Basch

Washington, D.C.

Business Administration

Cost Accounting and Analysis. By Carl Thomas Devine. (New York: Macmillan. 1950. Pp. xv, 752. $5.00.)

The author of this book has attempted to extend the area covered by the usual text in cost accounting to include some of the tools of cost analysis used by the economist and the industrial engineer. To the extent that he has succeeded in interrelating these tools with accounting techniques of analysis, he has indeed made a significant contribution.

The book is divided into three sections. Section One is concerned with the mechanics of cost gathering and, with little introduction, plunges into the problem of manufacturing or overhead expense under the topic of "Departmentalization" (Chapter III). There follow two chapters explaining process costs and a chapter illustrating process costs, the latter more in the nature of an exercise in joint products, and two chapters on joint costs. The rest of the section devotes three chapters to job order cost and one chapter to estimated costs, the latter generally used as a transition to standard costs.

Section Two has as its purpose the development of accounting techniques for cost control. The topic of costs systems carried part of the way in Section One is temporarily put aside and the initial chapter deals with a general discussion of system design, followed by a chapter dealing with the factory ledger. There follow four chapters on materials handling, pricing, and control, three chapters concerned with labor cost, social security tax requirements, and incentive wage payment plans. The reader is then returned to a consideration of cost systems with the next six chapters dealing with standard costs. The final two chapters in this section treat of gross profit variation and control of distribution costs.

Section Three marks a complete departure from the usual cost accounting text. Here an attempt is made with some success to relate the cost accountant's techniques to those of the economist in dealing with such topics as optimum output, factor combination, selection of plant, size, plant shutdown and

abandonment, selling cost analysis, and the relationship of cost to pricing policy. There are ten chapters in this section including a final chapter on uniform cost accounting and price discrimination.

Each chapter is followed by a series of interesting and provocative questions. In addition, the author has furnished an abundance of exercises and problems, some original and some culled from accounting examinations in this country and elsewhere. There are no practice sets furnished.

It can be seen that this book covers a vast amount of material with stress on theoretical considerations. The manner of coverage, in the opinion of the reviewer, makes this text impractical for a beginning course in cost accounting. The sequence followed in setting forth the approach to cost determination, the relative space allocation (four chapters to materials in section two, three chapters to labor in section two, and one chapter to manufacturing expenses in section one), and the heavy reliance on problems of the C.P.A. type would indeed make this a difficult text to use in a beginning course in cost accounting. However, for those students who have taken work in cost accounting and basic economic analysis, this textbook should provide an effective and challenging experience. While much of the economic analysis found in the pages of this text would be in the nature of review, the additional material and the problems would provide the basis for an excellent course in cost analysis.

One might take issue with the author on several points. The last-in, first-out method of pricing inventory issues is almost dismissed with the statement (p. 320) "Since the income taxing authorities now permit the use of last-in, first-out to be used in the determination of net income for taxing purposes, this method has increased in popularity, although it may never be one of the more popular methods." No mention is made of the restrictions placed upon the taxpayer adopting this method as contained in Regulation 111, section 29.22 (d)-2. Still on the topic of pricing of goods, the treatment of cost or market, whichever is lower (pp. 338-39) as if it were an independent method rather than as one requiring first a choice of cost (exclusive of LIFO cost) and to matching it to market prices is not in accord with general usage.

In introducing estimated cost systems, the statement is made (p. 209) "As a rule, differences between estimates and actual costs are assumed to be the result of errors in estimating, and such differences are distributed to the proper accounts so that at the end of the cost period all account balances are stated in terms of actual costs." This following a discussing of job order accounting using predetermined manufacturing expense rates and developing the beginning of variance analysis seems illogical. As a matter of fact, in the paragraph following the quoted statement, the reader is advised that estimate cost systems may be used to further cost control and are similar to standard costs.

The introduction to the chapter dealing with optimum output is unfortunate. It is maintained that the material covered in the first two sections of the book concerned itself with ". . . the assignment of costs to product and the careful control of costs in order to keep them as low as possible are of little or no use in the problem of short-run output for maximum profits or minimum losses." This follows an extended discussion of standard costs and flexible

budgets which includes a review of costs under various levels of output using plant and equipment already in existence.

The computation of federal and state unemployment compensation insurance taxes on the employer show the expense titles reversed (p. 371) and the entry for sales (p. 211) shows an erroneous amount. There are other errors of typographical nature.

While one may take issue with various aspects of this book, one must pay tribute to Professor Devine for his ability to handle such a wide range of accounting and economic topics and to grapple with the many theoretical concepts involved. The extended treatment given cost analysis in this book is bound to be reflected in cost accounting texts to be written in the future.

MICHAEL SCHIFF

New York University

Research Study on Variation of Costs with Volume. Three bulletins published by the National Association of Cost Accountants: *The Variation of Costs with Volume* (June, 1949); *The Analysis of Cost-Volume-Profit Relationships* (December, 1949); *The Volume Factor in Budgeting Costs* (June, 1950). 75 cents each.

It seems clear that some of the techniques of the modern economic analysis of the firm and other developments in theory are beginning to be reflected in the writings on cost accounting and business management. References to such a concept as marginal cost appear in new texts on cost accounting. In a controversy such as that which recently occurred over the extent to which the marginal analysis is actually used by businessmen, many have thought that altogether too little attention was given to the conventions and techniques of accounting used for the purpose of making business decisions. Many economists interested in the integration of costs, management, and theory will find this recent study by the N.A.C.A. on the variation of costs with volume to be of value.

The purpose of the study, as stated by the research committee of the Association, is to aid management in setting up budgets and accounting data for dealing with controllable cost factors under various assumed conditions. The committee made use of existing literature on the problem and also information supplied by about fifty large firms in regard to their use of cost-volume-profit analysis methods. The first study of this series was under the title of "The Variation of Costs with Volume" (Series 16, June 15, 1949); the second, "The Analysis of Cost-Volume Profit Relationships" (Dec. 1, 1949); and the last one was called "The Volume Factor in Budgeting Costs" (Series 18, June 1950). The first study begins with the definition of fixed and variable costs and the methods of determining these costs and their variations with volume. Costs are not inherently fixed or variable but result from managerial policy in acquiring buildings, machines, and certain personnel in a period of time. Even direct labor can be a fixed cost under certain conditions (p. 1223). With the general use of an accounting period and assumed conditions, certain

costs are independent of volume changes. This is an important fact for management policy. It is also necessary to keep in mind that changes in prices and in policies will also change fixed costs. The concept of variable costs, mainly materials and certain types of labor, also rests on the assumption that there are no changes in prices of factors, methods of manufacture, product, or in product mixture. There is usually a third classification of semivariable costs which have to be broken up on some basis between fixed and variable. This customary classification of costs rests on definite assumptions about plant, price, and management policy and must be revised when any important change occurs. As few firms are able to express volume in terms of physical production because of varied products and activities, it becomes necessary to try to find some unit to measure over-all volume, such as sales dollars or labor hours. Where there is a great diversity of products and a changing mixture, separate analyses must be prepared for each product. Simple correlation techniques such as the scatter charts may be used to study the rates at which costs have varied with volume. In actual practice this correlation is often found to be very low because of the failure to consider the nonvolume factors such as changes in the plant, materials, methods, hours of work, prices paid for factors, and other items.

The second bulletin describes the methods and use of data made by the firms covered in the field study and the interpretations of the results. Among these firms, the use of the break-even analysis is common. Of the fifty firms studied, thirty-one of these firms prepared a cost-volume analysis as part of their budget and twenty-eight used the break-even chart. Although it was found that the break-even chart was widely used and was an important device of management, it was the conclusion of the committee that other data derived from cost-volume-profit relationships were more important. More often management decisions require information about specific products or product lines. Because of the necessity for the allocation of fixed costs on a more or less arbitrary basis and the fact that the break-even analysis often proves to be unreliable, most of the firms studied calculated the marginal income contribution toward the total fixed costs. (The amount of the sales dollars available to cover fixed costs and profit after allowances for variable costs. This is commonly referred to as the "contribution" principle.) In contrast to the data for the break-even analysis, these marginal income ratios can be determined without allocation of common costs and constitute an important and useful approach to the entire problem. The committee concluded that the value of this whole cost-volume-profit analysis rests on the reliability of the data and the ability of the firm to control costs. Great care must always be used in the interpretation of any analysis of this kind because of nonvolume factors.

The third study, including some forty-five firms, covers the problem of volume in budgeting costs. The over-all plan or master budget is usually made for one year and must be predicated on a forecast of sales volume. Most of these firms worked out variations of costs for volume. By flexible budgeting, allowances can be established for a desired volume and the prediction of costs made before the work is begun. In most of the companies it was found that

there was coordination of the master and flexible budgets with standard costs together with forecasts for variance due to volume.

This study, although intended for the cost accountant or budget director of the large industrial firm, does have considerable significance for the person interested in modern economic analysis. As might be expected, there is clear and unmistakable evidence in these studies of the general usefulness and importance of the whole concept of fixed and variable costs. Although the break-even technique is common, it has only limited reliability. Marginal calculations form a basis for certain types of business decisions. Usually these calculations, however, are made on the basis of a block or a batch of units (total aggregates) rather than by a "unit dosing method" as portrayed in elementary theory. In view of such studies, the two-dimension analysis of cost and volume as set forth in the usual text is very superficial. It is even difficult to say what we mean by volume if one firm makes several hundred products and has a great variety of activities. Too much stress cannot be put on the fact that there are many important factors which may affect costs other than volume. Any attempt to portray business decisions as the result of arithmetic computations from actual accounting or statistical data can be made only with serious limitations. It is hoped that economic analysis may in time make important and useful contributions which will affect accounting techniques and concepts but it will take time for accountants to work out devices and methods to bring about these refinements.

LAWRENCE R. CHENAULT

Hunter College of the City of New York

Industrial Organization and Markets; Public Regulation of Business

The Regulatory Process in OPA Rationing. By VICTOR A. THOMPSON. (New York: King's Crown Press, Columbia University. 1950. Pp. xi, 466. $5.75.)

The available scientific literature on consumer rationing in this country is so scanty that any serious contribution to it would be welcome. This is not primarily a book about rationing. The place of rationing in a general regulatory system of mobilization and stabilization controls, its consequences on economic behavior, and its uses and limitations as a tool, are outside the author's scope; so also are the political, managerial and public relations problems of rationing.

Instead, this is a case study in the processes of administrative law-making (he calls it decision-making, or planning), and more particularly a valiant and self-conscious effort to pioneer in thinking about the official behavior of the people who wrote and issued the regulations. Taking the rationing program goals for granted, the author seeks to explain why the regulations were written as they were, to point out some of their faults and absurdities, and in the end to challenge some commonly held concepts of administrative organization and practice. His experiences in OPA's fuel rationing branch and his

research in OPA files furnish the illustrative materials, or ammunition. The innovations consist chiefly in the behaviorist approach to official action and in the unconventional terminology and organization of the analysis. The results are sometimes enlightening, but often only exasperating.

To begin with terminology, it is a highly restricted view of the "regulatory process" to equate it, as the book implicitly does, with the headquarters decisions upon, and the language of, regulations, amendments and orders. On the other hand, it is only an unconventional extension of the term "planning" to make it include all such decisions taken with the calculated intention of influencing the conduct of others. The same can be said about using "communication" (p. 330) to include persuasion. There is real danger of confusion, however, in the distinction drawn (p. 18) between the "administrative" and the "legal" technique (much to the disparagement of the latter)—the one influencing conduct by making the desired course seem the more attractive of alternative options, while the other only promises punishment for failure to take the course prescribed. This obscures the facts that a choice is available in both cases, and that both techniques are familiar in legal tradition. It amounts to saying that you can catch more flies with honey than with vinegar, if you have some honey. OPA's charter gave it very little of that to dispense.

It is not easy to summarize even the major substantive points in the author's wide-ranging argument. In the field of administrative theory, he observes that because each rationing branch embodied the agency's major purpose with respect to the commodities in its charge, all "clearances" outside the branch—the "overhead"—seemed to branch members to be merely misinformed or misguided obstacles to progress. This raises important problems of administrative organization but his own worm's-eye view as a branch member hinders objective discussion of them. He concludes that "staff" and "line" are largely myth, and that people worked better as a team when no hierarchical distinctions of status were drawn among them—a salutary lesson from psychology, within limits. But he overlooks the value of hierarchy in allocating responsibility. Moreover, his principal evidence here is an extended discussion of the gasoline eligibility committee, which was not an operating branch but an informal appeals board whose function was to find reasons for saying no. He is on less debatable ground when he argues, again from psychology, that the branches became so far the captives of the logic of their own major purposes that they were unable by themselves to make the changes in rationing policy that political forces ultimately demanded. This suggests a theory of bureaucracy, the ramifications of which in the literature on that subject are not explored.

Much of the rest of the book is devoted to questions of jurisprudence (though he does not use that term) and of legal draftsmanship; it serves also as a vehicle for vehement attacks on lawyers and their ways. Most of the questions are equally applicable to statute law-making, and some of them to court decisions as well. Over the years they have been the subject of a considerable body of legal scholarship in jurisprudence and legislation. There

is room here to say only that the author appears not to have contaminated his thinking by reading what lawyers have written about decision-making and legal draftsmanship.

HARVEY C. MANSFIELD

The Ohio State University

Corporate Finance and Regulation. By CHELCIE C. BOSLAND. (New York: The Ronald Press. 1949. Pp. vii, 529. $4.25.)

According to the Preface, the author's aim is to give "a broad and balanced view of the American business corporation as it exists today in an environment strongly colored by government regulation." The book does not presume to deal with individual financial topics as exhaustively as do other texts. It is important that the reader keep this point of view in mind, else he will find himself criticizing its shortcomings as a textbook in finance.

The volume begins with the conventional textbook approach. The corporation is described; its development traced from early Roman times; its advantages and disadvantages are compared with those of non-corporate forms of organization; and the routine for incorporation is described. Then follow several chapters containing a detailed description of the technical provisions found in typical stock and bond contracts.

The treatment at all times is general. The first eight chapters of the book to which this subject matter is confined probably present the best general survey of business finance available. There is a minimum of the management point of view (*i.e.*, under what circumstances is this or that procedure or device most appropriate), the author's apparent objective being to give the reader the perspective needed to understand the growth of and necessity for government regulation.

That the book is not intended for use as a text in the usual corporation finance course becomes obvious when the discussion gradually shifts from the corporation itself to the place of the corporation in the social scheme. Here a series of chapters is devoted to corporate growth, combination and concentration, the trust problem, monopolies, regulation of railroad and public utility rates, and other regulatory trends.

The reader is constantly tempted to think of the book as another text in finance and to forget that the financial description of the first part is intended only as background material for the later discussion of regulation. If this objective is kept clearly in mind, the book fills an existing gap in financial literature.

WILFORD J. EITEMAN

University of Michigan

War Economics of Primary Producing Countries. By A. R. PREST. (New York: Cambridge University Press. 1948. Pp. ix, 308. $4.50.)

This book presents a systematic investigation of the general economic problems of a selected group of primary producing countries during the 1939-1945 war period. The countries chosen are India in the Far East, seven

countries in the Middle East and the British Crown Colonies, Nigeria and Trinidad. Detailed analyses are presented of the problems in India, Palestine and Egypt, and shorter analyses of those in the other countries, the length depending on the amount of information available.

Although the title of this study might suggest an analysis dealing with highly specialized economies with common problems, the countries covered show both similarities and differences. They experienced similar problems in applying "Western" controls and inducements to populations dependent largely on primitive agriculture; they were all plagued by hoarding and fear of hoarding; they all experienced difficulties in gathering accurate information on internal conditions, but they were confronted with a somewhat simplified analysis because the commodities and industries represented were not numerous. On the other hand, the countries differed in area, population density, climate, geography, resources and economic structure. The contributions that they were called on to make during the war were diverse. Some that had been dependent on outside sources for food were required to become self-sufficient in this respect; others became increasingly vital sources of materials and manpower for the Allied forces.

Each of the countries is analyzed under a standard procedure. First, physical changes, including so far as possible those pertaining to manpower, production, and consumption, are appraised. Second, financial changes concerning money supply, prices, incomes and sterling balances are considered. Third, the two foregoing aspects are brought together in a discussion of inflation and controls. Finally, perhaps the most interesting section devoted to each country is the critique of war organization and conclusions of the author.

In some of the countries, the problem of wartime controls was made difficult by the diverse interests and clashes within the population. In Palestine, for example, it has been said that the only matter on which the Jews and Arabs were in unanimous agreement was opposition to further increases in taxes. The Sudan was confronted with a mixture of Arabs, Nubians, Berberines and miscellaneous races with different types of living. In Cyprus, on the contrary, the population was relatively homogeneous.

A general characteristic of the primary producing countries, emphasized by the author, is the fundamental rigidity of their economies. Limited supplies of land and capital equipment and excessive dependence on imports made it inevitable that a large expansion of incomes would spend itself on higher prices rather than increased volumes of output. The countries did not show large increases in output even under strong stimulus. The countries as a rule were heavily dependent on imports and the sharp drop in receipts of essential materials dealt a serious blow to them.

The author believes that the policy of the Allied Powers was at fault in not utilizing more fully the reserves of labor in the primary producing countries. Nowhere among the countries covered, with the possible exception of Trinidad, were wartime demands for labor sufficient to make serious inroads on the reserves of labor. This, parenthetically, occurred while the more highly industrialized countries experienced acute shortages almost without exception. The author feels that any attempt to utilize Indian resources in

the best possible way should have aimed at recruiting a large army but equipping it and possibly even feeding it from overseas.

A common characteristic of the primary producing countries is their susceptibility to inflation and deflation. The need for controls is great where supplies are subject to the irrational and volatile fears of ignorant peasant producers and the unscrupulous deals of greedy merchants. Except in such countries as Cyprus and Trinidad, smuggling across borders was difficult to control. The main reason, however, why the governments did not take adequate action to curb inflation was their unwillingness to do so. The greater the rise of prices, the greater the profits of local producers and merchants and the accumulation of foreign balances. This attitude occurred even though the obstacles to price falls were far less in the primitive economies than in the more advanced economies. Such deterrents as trade unionism, widespread combinations and associations of businesses and relatively small internal debts calling for government protection were not generally strong price-supporting elements.

Despite the inflationary tendencies in the primitive economies, the author cautions against the conclusion that the high degree of inflation hindered the war effort. Some measure of inflation, he asserts, was necessary. There is at least no convincing evidence that the large expansion of money demand was directly responsible for limiting the output of producers.

An obvious point revealed by the wartime experience in the economies was the difficulty of increasing the rate of savings and thus increasing industrial capacity from within the country even in such periods of stress. Even the consumption expenditures of the wealthy is in many instances a high percentage of income. Those who make their savings available for new ventures usually are interested mainly in projects capable of yielding quick returns and high profits. Adequate imports of capital goods are vitally necessary to increase *per capita* output and this increase is itself the strongest safeguard against inflationary tendencies.

The author brings together a considerable volume of data from personal interviews and correspondence as well as published sources, and displays adeptness in weaving the data into his analysis. He is somewhat overzealous, however, in his guidance of the reader by an excessive use of such terms as "we have seen" and "we shall see." The book would be improved by letting the reader decide for himself in more cases what he has seen or is expected to see.

WILBERT G. FRITZ

Washington, D.C.

Public Utilities; Transportation; Communications

Transforming Public Utility Regulation. By JOHN BAUER. (New York: Harper and Brothers. 1950. Pp. xi, 367. $5.00.)

In this book, an old fighter for effective public utility regulation returns to the problem which first concerned him twenty-five years ago. And the

theme, with some new variations, is the same as in the older book.[1] Regulation is to be made effective on the basis of a strict application of the cost-of-service principle. The occasion for a review of the status of this perennial problem is the altered position taken by the Supreme Court in reviewing the constitutionality of the regulation of natural gas pipe-line companies by the Federal Power Commission under the Natural Gas Act of 1938. The hopes raised by two crucial decisions, beginning with the Natural Gas Pipeline Company case of 1942[2] and continuing with the Hope Natural Gas Company case of 1944 have generated a flood of literature addressing itself to this and related problems.

The analysis is presented in two parts, of which the first concerns itself with the "nonadministrability" of regulation in the past, and the second deals with "making future regulation administrable." As a background for his proposals, the author traces the federal Supreme Court decisions from Smyth vs Ames (always characterized as the villain of the piece) in 1898 to the Los Angeles Gas and Electric Co. decision in 1933, and then proceeds to show how the new Supreme Court decisions have provided the opportunity for a new start in the evolution of regulatory procedures. Although the author develops little that is new in this part of the analysis, it is important for an appreciation of the formula which he later suggests to note that he finds the source of present difficulties in the "imprecise standards of existing regulation." He traces these, for the most part, to the loose and inadequate regulatory legislation which even recent attempts at revision have hardly helped. He finds that vagueness and inadequacy were imported into the situation by the rate-making rule of Smyth vs Ames which later decisions have not improved very much. The result has been protracted litigation and a situation unsatisfactory alike to consumers and investors. Commissions have functioned more like courts than administrative tribunals, with insufficient stress upon the public function of regulation.

The remedial formula, which the author discusses at considerable length runs in terms of a rate-base of original cost less accrued depreciation (both physical and functional) plus net working capital. To this a rate-of-return is to be applied either as an over-all rate upon the total rate-base, derivable from the asset side of the balance sheet, or alternatively as a differentiated rate-base, derivable from the liability side as the investment of bondholders and the equities of preferred and common stockholders. The actual percentage rate is to be equated to the actual cost of borrowed and contributed capital. The flexible element in this set-up would be the return to the common stockholder, which would vary with current requirements of the market for risk capital. The total sum thus derived would become the "protected return" upon which the ensuing definiteness of earning power would be premised. This definiteness and administrability of return requirements is to be sought for

[1] John Bauer, *Effective Regulation of Public Utilities.* (New York: Macmillan, 1925.)

[2] *Cf.* "The United States Supreme Court Redeems Itself," M. G. Glaeser, *Journal of Land and Public Utility Economics,* Vol. 18 (May, 1942), p. 146.

each utility and to constitute the basic regulatory job of the commissions. It is deemed to be achievable because each utility operates in a protected, monopolistic market. Similarly, operating revenues must cover all the costs of operation under efficient and economical management including depreciation and taxes. In order to make regulation as nearly automatic as possible, the formula provides for a rate-equalization reserve with the recapture for consumers of all earnings in excess of the "protected return." By subjecting all operations to administrative scrutiny and continuous accounting control Bauer contends that regulation can be transformed into an efficient and exact process. A model regulatory bill is appended in a concluding chapter.

With these underlying determinations out of the way, Bauer is hopeful that an end can be made of past predatory practices, particularly if, as he suggests, commissions can be adequately financed and staffed by assessing the costs of regulation against utility revenues. Particularly is he hopeful that management will no longer have a special interest in maintaining what he calls "excessive rate differentials," which, while they appear to arise out of variations in demand costs, are really only monopolistic devices of charging "what the traffic would bear." "As a matter of fact," says Bauer, "there is virtually no causal relation between the many individual maximum demands and the total system maximum, for which the company must make provisions to assure service to all customers." He seems to be against all cost considerations as a basis for pricing when he contends that "the costs involved become fixed and joint, depending on neither numbers of customers, nor quantity of service supplied, nor the individual maximum demands. While they must be included in the fixing of rates, their proper allocation to particular service classifications depends upon experienced judgment applied with the purpose of establishing well-balanced, reasonable, nondiscriminatory and promotional schedules."

In this brief review it must at least be mentioned that the transforming process is conceived not to be complete unless the commissions are also lifted into effective planning agencies. In this way public interests are to be secured. These have the seven-fold aspect of fixing reasonable rates, providing for exact accounts and records, promoting efficiency and economy, establishing sound financial policies and procedures, developing construction programs, bringing about corporate readjustments and producing integration of utility properties and operations. Of course, planning also includes coordinating state and federal regulation, and here the process is beset with difficulties. It can be, and to some extent has been, done for the local and regional utilities such as supply electric, gas, water, telephone and local transport services. But inter-regional utilities, like railroads, airlines, water transport, motor-bus and trucking companies, and pipelines, have so far defied all efforts in this direction. In fact, the author is not sure that the transforming process of monopolistic coordination can be carried this far, for he comes to the conclusion that "apart from comprehensive reorganization of the railroads on a much wider monopoly scale, there is an inherent competitive force that should be maintained or freed in the public interest."

It is difficult to give a fair appraisal of this work because the author says

it was not written for economists or technical experts. He wants it to reach utility officials and professional groups, but it was "prepared mainly for consideration by public officials who have primary responsibility for formulating and administering policies in regard to public interest." As an afterthought, perhaps, he feels that "it should be available also for public utility courses in colleges." Except in a supplementary way, the book is hardly adequate for a text. It does not survey the entire field, while the arrangement of subject matter and mode of expression is highly argumentative. As expressing a distinct point of view and fortifying it with much cogent reasoning, *Transforming Public Utility Regulations* is worthy of careful consideration by policy makers. It represents a distinct improvement over the earlier formulation.

Still, the present reviewer cannot conceal some uneasiness lest the promised achievements of the Transformation be taken at full value. As a blue-print or model, the suggested formula has much to commend it. Yet the economic, not to say political, terrain of the utility field is too broken for one single formula to find easy and universal application. The history of regulation is replete with instances where "the best laid schemes o' mice and men gang aft agley."

MARTIN G. GLAESER

University of Wisconsin

Southern Freight Rates in Transition. By WILLIAM H. JOUBERT. (Gainesville: University of Florida Press. 1949. Pp. xiii, 424. $6.00.)

This fully documented and well-indexed book is one among several studies of railroad freight rates in the South, such as those of J. H. Allredge, formerly of the Tennessee Valley Authority, and of D. P. Locklin for the Board of Investigation and Research. Dr. Joubert's book has a final chapter on the interterritorial freight rate problem, but it deals primarily with the history of southern class rates, with the forces that have shaped them; while the other studies are concerned almost altogether with the extant territorial discrimination.

The first chapter of the book takes up the forces that influenced rates in the formative period (1830-73), the second traces the effects of monopoly control during the years 1873-97, and the third discusses the impact of regulation down to 1914. The next six chapters describe subsequent rate adjustments between the South and other territories and within the subterritories of the South. The last chapter summarizes important aspects of the Class Rate case, decided in 1945.

Among the principal rate-shaping influences, according to the author, have been the competition of cities, including the alternative gateways to the South, and of the various rail and water routes; monopolistic control of rate-making through carrier traffic associations; specialization in southern agriculture; destruction by the Civil War; railroad operating conditions as determined by terrain and traffic density; and, especially in recent years, the pressures of regulation. These forces, but not a sometimes alleged conspiracy against the South, are said to have produced a rate structure ill suited to an economy

capable and in process of gradual industrialization. The most outstanding structural imprint pointed to as inimical to industrialization has been a high level of class rates, particularly in relation to rates in official territory, although the author shows that southern freight rates have developed by subterritories with somewhat different characteristics. He also recognizes that commodity rates may have been prejudicial to industrialization, but such rates are considered only incidentally.

The author explains that the long-present high class rates were reflected in the southern class rates prescribed by the Interstate Commerce Commission in 1928, and that the discrimination against the South continued until 1945, notwithstanding changed conditions. In the latter year the Commission finally ordered a reduction in southern and an increase in northern class rates, pending the initiation of a uniform classification and a single scale of class rates throughout the United States east of the Rocky Mountains. This decision and the controversy that led to it are described in some detail.

In his preface the author says that "the Southern freight-rate structure fails to meet the needs of an economy in transition," and he sets for himself, at least by implication, the ambitious task of demonstrating this fact and of proposing a means of remedying the maladjustment. His conclusion rests primarily upon the difference in the levels of class rates in the South and in the North; and the inference is that if the discrimination against the South were removed, the industrial development of the region would no longer be restricted by transportation conditions. Although it seems reasonable to believe that railroad class rate discrimination against the South has retarded industrialization to some extent, adequate support for the author's thesis requires more than his book provides. The effects of other rate relationships remain to be explored.

Even though Dr. Joubert has not sufficiently buttressed the assumption in the preface, in the opinion of the reviewer his book should be judged, not as an analysis of the economic effects of railroad class rates in the South, but as a history of these rates, what it really is. As such, it constitutes a valuable contribution to knowledge. In fact, it is the only comprehensive history of southern class rates in print.

TRUMAN C. BIGHAM

University of Florida

The Railroad Monopoly: An Instrument of Banker Control of the American Economy. By JOHN G. SHOTT. (Washington: The Public Affairs Institute. 1950. Pp. xi, 250. $3.00.)

According to the author "this study briefly reviews the causes and methods important in the successful campaign to exempt the railroad industry from the anti-trust laws." Actually, the book has only two objectives:

(1) To support the validity of the charge that the railroads had conspired to violate the anti-trust laws as set forth in Georgia vs. The Pennsylvania Railroad Company et al. (324 U.S. 439), and in U.S. vs. The Association of American Railroads, The Western Association of Railway Executives et al. (4 FRD 510).

(2) To prove that the Reed-Bulwinkle Bill was an iniquitous attempt to preclude judicial decision on the charges of railroad conspiracy and that the enactment was rammed down the throat of Congress by an all-powerful banker and railroad lobby, spearheaded by the Association of American Railroads.

The analysis is less than persuasive on all scores. First, there was no useful purpose to be served by laboring the complicated issues involved in the two court cases. Shortly after the Supreme Court took jurisdiction over the Georgia rate case in 1944, a Special Master (Lloyd K. Garrison) was appointed to take testimony and report his findings and conclusions to the Court. After extended investigation, the Special Master filed with the Court in June 1950 a report based on three volumes (923 printed pages) of testimony and evidence.

The general tenor of the Garrison Report was such that, coupled with the intervening passage of the Reed-Bulwinkle Bill, the defendant railroads, on October 23, 1950, filed a motion to dismiss the conspiracy suit. The Special Master concluded, among other things, in the main body of his report that "the evidence does not support the claims of injury to Georgia's economy, asserted in the amended complaint and noted by this court as charging an injury beyond that suffered by particular individuals; nor is the evidence sufficient to warrant a conclusive presumption of injury to Georgia's economy."[1] The significant aspect of this development was that the State of Georgia, the original complainant, joined the defendant in the dismissal motion. On November 27, 1950, the Supreme Court granted the joint motion and the extended controversy was closed.

It must have been a source of considerable embarrassment to the author that *The Railroad Monopoly* was published only a few days before the Court dismissed the suit. This is especially true since the entire argument of Part I of the book is little more than a brief in unqualified support of the allegations of railroad conspiracy and rate-making contained in the original complaint brought by the State of Georgia. It argues throughout that only by dissolution of the alleged banker and railroad monopoly and by the outlawing of rate-making through collective railroad action could shippers and regions hope to be protected against discriminatory and exorbitant railroad rates. In fact, the author goes so far as to say that the "Reed-Bulwinkle Law has done more than permit the legalization of monopolistic practices already characteristic of the private centralized administration of the railroads. [It] ensures the continued growth of private monopolistic control over the industry and appears to make inevitable the eventual direct government control of railroad operating policies" (p. 160).

Such an interpretation is far-fetched especially in view of the fact that the State of Georgia, in its motion to dismiss the original complaint, said among other things that, as a result of the enactment of the Reed-Bulwinkle Law (Section 5A of the Interstate Commerce Act) it may now "look to the Interstate Commerce Commission for proper regulation of the rate associations

[1] *Traffic World*, "Dismissal of Georgia's 'Conspiracy' Suit Recommended by Special Master," June 17, 1950, p. 21.

and proceedings to which all of the interested railroads are parties."

This outcome of the legal controversy naturally raises questions as to the validity of the author's second major contention, namely that Congress was duped into passing the Reed-Bulwinkle Bill by a lobby representing "powerful investment bankers and railroad officials" (p. 4). He states categorically that:

> the 80th Congress yielded to the transportation lobby and passed the Reed-Bulwinkle amendment . . . over President Truman's veto June 17, 1948. By this action Congress scrapped the application of the Sherman Antitrust Law to the rate making activities of the railroads and permitted the Interstate Commerce Commission to legalize the almost absolute control, by a financial oligarchy, of basic policies on freight rates and passenger fares.

An assertion carrying such ominous implication might be passed over as a rather naïve view of the subservience of Congress and the power of the railroad lobby, if it did not bear the earmarks of deliberate distortion of the facts.

In the first place, the legislative history, purpose of, and source of main support for the Reed-Bulwinkle Bill are misrepresented. No transportation issue in recent years received a more comprehensive and penetrating consideration by Congress than the proposals embodied in that Bill. Moreover, the favorable report of the House Committee in charge of the legislation stated:

> The Bill has the virtually unanimous support of all those directly interested in transportation, including commissions, both federal and state, charged with the responsibility of regulating transportation, carriers of all kinds, and shippers throughout the country, including industrial, agricultural and livestock interests.[2]

The author would have us believe that all of these organizations (many with interests directly antagonistic to the railroads) together with the two-thirds majority of Congress required to override a presidential veto, were either intimidated or befuddled by an all-powerful railroad lobby. Curiously enough, this allegedly dominant lobby has never been able to obtain any relief through Congress from what the railroads and many students of transportation consider to be a heavy competitive disadvantage arising out of federal subsidization of highway, air and water transport agencies.

The second major misrepresentation contained in the author's characterization of the Reed-Bulwinkle Bill relates to the basic nature of rate-making, and the objectives of national transportation policy as expressed in the Interstate Commerce Act.

Since passage of the Hepburn Act in 1906, national transportation policy has moved steadily toward major dependence on positive and comprehensive Commission regulation for the maintenance of reasonable transportation rates and satisfactory service. With the extension of nation-wide markets, increasing emphasis has been placed on the maintenance of reasonable uniformity of rates

[2] *Report of House Committee on Interstate and Foreign Commerce,* July 1947. The same report listed as endorsing the Reed-Bulwinkle Bill: 48 governmental authorities, state and federal; 20 carrier organizations, representing the principal forms of transportation and their employees; 85 shipper, traffic and transportation organizations; 145 agricultural and livestock associations; and 660 Chambers of Commerce and other business organizations.

as between regions, localities, commodities and similarly situated shippers. Manifestly, in a situation where the nation's railroads operate for all practical purposes as a single system, although owned by some 131 private corporations, a high degree of collective action must be permitted if the initiative in rate-making is to be left with railroad management. As the late Commissioner, Joseph B. Eastman, in favorable testimony on the Reed-Bulwinkle Bill stated:

> If the rate structure is to be reasonable, free from unjust discrimination or undue preference and prejudice, as simple and consistent as may be, reasonably stable and sufficient for the financial needs of private ownership and operation, the carriers must be in a position to consult, confer and deal collectively with many phases of the matter.

Moreover, a spokesman for the group most directly interested in reasonable and nondiscriminatory rates—the leading shippers of the country—similarly testified that:

> Present methods of making rates through rate bureaus, conferences or associations, are necessary to an orderly and consistent presentation of proposed changes, to the maintenance of a lawful and non-discriminatory rate structure, and are a distinctive advantage to the shipping public.[3]

Basically, the Reed-Bulwinkle Act does nothing more or less than give the Interstate Commerce Commission power to prescribe and supervise the standards and procedures under which the nation's common carriers may decide jointly what rate changes are to be filed with the I.C.C. for approval or disapproval.[4]

The alternative as proposed by the Department of Justice and the State of Georgia and championed by *The Railroad Monopoly* would have led inevitably to conflict and confusion. If the rate conferences and bureaus had been dissolved, the Commission would have been swamped by the filing of thousands of uncoordinated proposals for rate changes. In order to avoid "chaos" in rate-making, the Commission, for all practical purposes, would have been forced to assume primary jurisdiction over the onerous tasks now performed jointly by the carriers and shippers in the initiation of rate changes. In the meantime, the shippers who claimed injury from exorbitant or discriminatory rates would be forced to seek relief through individual suits in the courts, a reversion to the situation which prevailed prior to 1906.

There is no evidence that the groups with primary interests in the preservation of a privately owned transportation system and in the maintenance of reasonable and stable rates, entertain any doubts as to the wisdom of the policy embodied in the Reed-Bulwinkle Act.

CHARLES L. DEARING

The Brookings Institution

[3] A. H. Schwietert, Traffic Director, Chicago Association of Commerce and Industry, and subsequently President of the National Industrial Traffic League.

[4] This in effect gives the Interstate Commerce Commission the same powers possessed by the Civil Aeronautics Board under the Civil Aeronautics Act of 1938 with respect to airline activities, and the late U.S. Maritime Commission in connection with shipping companies.

The Elements of Transportation Economics. By G. LLOYD WILSON. (New York: Simmons-Boardman. 1950. Pp. 178. $2.95.)

This small volume seeks to impart "an understanding of the important part transportation plays in the development of industry and commerce" by presenting "certain economic principles" of special import to transportation and by describing "interrelationships of transportation" with other economic areas.

The customary textbook explanation of transport contributions to economic development is followed by statement of some economic principles underlying transportation. Thus, transportation "enhances values through place utility"; with storage, transportation enhances time utility and facilitates year-round operation; and additional transportation contributes to economies of large-scale production when its cost is offset by lower factory costs. A "decreasing cost or increasing return" tendency is found, particularly in transport by railroad and pipe line, both from a large mass of constant costs and from large firms. Hence, earnings fluctuate widely and competition tends to be excessive and to require regulation. Rates reflect distributing total costs arbitrarily according to relative demand because of joint cost, exemplified by carriage in one train of goods of varying values, shipment sizes and hauls. Except for the concept of joint cost used, these principles have the weight of tradition.

Interrelationships described include transportation as a factor in location, in geographical relations in agricultural prices, and in market organization and marketing. The final chapters describe transportation instrumentalities and typical railroad organization.

This book emphasizes rail transport and appears designed for carrier and traffic personnel. Its exposition of the interrelations between transport and other economic areas will contribute understanding of the broad aspects of their jobs. But unlike M. R. Bonavia's *The Economics of Transport,* another small volume, Wilson's *Elements,* in this reviewer's opinion, is not adapted, as hoped in the Foreword, for giving "the answers to some of the complex problems which transportation economists are facing." While a theory basis for existing policy is suggested, that theory lacks refinements introduced by competitive transport, differing economic characteristics, and advances in cost knowledge.

JAMES C. NELSON

Washington State College

Land Economics; Agricultural Economics; Economic Geography

The Location of Economic Activity. By EDGAR M. HOOVER. (New York: McGraw-Hill. 1948. Pp. xv, 310. $3.75.)

Some twenty-five to thirty years ago, J. M. Keynes edited a series of books called the Cambridge Economic Handbooks. The objective of that series, as stated by its editor, was "to convey to the ordinary reader and to the uninitiated student" the general "principles of thought which economists now apply to economic problems," the authors concerning themselves not with "making original contributions to knowledge" or even with attempting "a

complete summary of all the principles." The belief was expressed that at that particular time (1922) "economic science has recovered its wind" after the press of wartime emergencies, traditional principles were being improved and revised, and that "in the end this activity of research should clear up controversy."[1]

The book to be presently reviewed is one member of a new Economic Handbook Series, edited by Seymour E. Harris, and presumably providing the fruits as they now stand of much of this research activity. The objective of this later series, as stated by its editor, is to fill a need not met by "the usual textbook or by the highly technical treatise," to "present a distillate of accepted theory and practice" by "scholars, each writing on an economic subject of which he is an authority." "The time has come," the editor suggests, "to redress the balance between the energies spent on the creation of new ideas and on their dissemination. . . . Popularizers without technical competence, unqualified textbook writers, and sometimes even charlatans control too large a part of the market for economic ideas." The first task of an author of a book in this series "was not to make important contributions to knowledge . . . but so to present his subject matter that his work as a scholar will carry its maximum influence outside as well as inside the classroom." The titles of the Series, in addition to the one by Mr. Hoover, cover such subject fields as *National Income Behavior, Economics of Employment, Monetary Theory and Fiscal Policy, Socialism, Capitalism.* It is for these fields for which the time has come for scholarly energies to be diverted in part from the work of creation, revision and improvement and turned to the disseminating of what now may be taken as truth. My responsibility is to describe and to express judgment upon the way in which Mr. Hoover has carried out his part of the task.

That Mr. Hoover is technically competent as an economist clearly is the case, and I can think of no one in this country whom I would regard as better qualified for carrying out the assignment. So far as I know, all the reviewers of this book have expressed favorable judgments, and I know of other qualified persons who regard it highly as a good and useful contribution for classroom and reference purposes. When I say, then, that I find the book disappointing, I am apparently expressing an unrepresentative view, and for all the reader may know it is my point of view, rather than Mr. Hoover's book, that is at fault. Therefore, in indicating my conception of the character of the book, I shall attempt to make explicit this point of view.

Mr. Hoover's main concern he states to be "not description or analysis of specific actual distributions of resources, industries, or populations but the formulation of principles governing the interrelation of individual locations, the significance of locational changes, and the legitimate scope of public planning and control" (p. 1). In a later chapter the statement is made that "diagnosis, not prescription, is still our main concern. . . . Discussion of appropriate policies for palliation, cure, or prevention of locational ailments will be found in Part IV" (p. 186).

[1] These remarks were made in Mr. Keynes' introduction to D. H. Robertson's *Money*. Mr. Robertson recently had occasion to review the revisions and improvements of the past two decades (*Quarterly Journal of Economics*, February, 1950).

This willingness to assume the rôle of social doctor appears to me to promise more than can be provided. The "principles governing interrelationships" and definite analytical knowledge of the process of "locational change and adjustment" I believe have yet to be discovered; and when I attempt to list statements that seem to be presented as such in the first three Parts of Mr. Hoover's book, "Locational Preferences and Patterns" (7 chapters), "Locational Change and Adjustment" (3 chapters), and "The Locational Significance of Boundaries" (2 chapters), I obtain what to me is a disappointing lot.

The fault, as I see it, in Mr. Hoover's book is methodological. He, in effect, follows the traditional organization of the theory of production and the market. This latter, in the more systematic developments, deals first with the economizing behavior of the individual units, the firm and the family. Necessary and sufficient conditions for the maximizing of net revenue of the firm and of satisfaction of the family unit are derived, and from these there are inferred certain aspects of the effects of specified changes of conditions. In the next stage of the analysis, such independently acting units are aggregated into classes of units, and the behaviors of aggregates of firms and of consuming units are studied. The final step brings together the theory of production and market supply, on the one hand, and the theory of choice and market demand, on the other. The conditions of general equilibrium of the entire system of economizing units are considered and the effects of changes in conditions are inferred.

This theory has little or nothing to tell a businessman about how to economize or to maximize or to minimize or to generally conduct his affairs. It assumes that he already knows best how to manage his concern, and it analyzes certain behavior properties of a system of such informed units, the independence of each being constrained by specified scarcities implying certain forms of interdependencies as characteristic of the system. The derived numerical properties are of very general form. The theory states, as logical inferences, for example, that an increase of certain magnitudes implies, *ceteris paribus,* a decrease of other magnitudes, that the arbitrary introduction of certain plausible time lags implies, *ceteris paribus,* a time process in the adjustment of some magnitudes to changes in others.

The empirical content that is introduced in the development of the theory consists of no more than that which a reasonably informed discusser of a problem might draw up from his own mind by introspection into his own behavior and by reflection upon past casual observation. Preference functions and production functions are characterized by certain shapes, people do attempt to achieve certain types of ends, the resources available to individuals and groups of individuals are limited, it is good that coercion of individuals be minimized and that no individual be subjected to the personal power of another. One might imagine the development of the theory in a Socratic dialogue, with Socrates purporting to be seeking a solution to a problem and not expositing one. That is to say, the method of conventional equilibrium economics is in essence that of dialectics, the method of seeking truth by question and answer, eliciting knowledge by unfettered discussion within a group, where that knowledge or final answer lies, in some sense, hidden

within the minds of each of the members of the group. Is a wage too low? Is a price too high? Are the incomes of a particular class too low? Are expenditures in certain directions too great? Is growth too small or are growth differentials out of balance? Are observable shifts greater than necessary? Is a certain imbalance a performance characteristic of the system? Are there better ways of organizing joint action by free individuals? Is a proposed change in rules desirable? Or if all the requisite knowledge does not presently exist within these minds, the knowledge of the appropriate form and measures to be used in obtaining that knowledge does exist and must be elicited through discussion. What data should be used and what computations should be employed in determining magnitudes measuring shifts, levels, distributions, rates, and so on such that the discussion might proceed? The primary questions are evaluative, and include undefined concepts, and the answers and definitions lie within the minds of the free members of the group. The development of the theory is a development of criteria and meanings by which to judge the structure and performance of a social organization.[2]

Now it is my opinion that while the arrangement of Mr. Hoover's development of his principles follows the general logical order of the traditional equilibrium model, the statements framed as conclusions do not indicate a clear understanding of the essential nature of the problems for which the method is suitable and of the limitations, for purposes of prediction, of a method of inquiry employing such modest empirical restrictions. I do not mean to say that the exposition in this book is systematic in the way that, say, mathematical accounts of general equilibrium economic theory are systematic. The arguments are intuitive and not analytical, and the book is comprised mainly of interpretations of descriptive material. But one may see in Mr. Hoover's development the traditional stages in the analysis.

For example, he describes the order of his approach as follows: "To arrive at an understanding of this complex system of economic interrelations one must proceed by easy stages. . . . We must begin by putting ourselves into the shoes of the individual consumer or producer to see what makes him prefer one location to another. His 'environment' is for that stage regarded as fixed. At the next stage we can try to see how the economic interrelations of numer-

[2] Another's words may be used to convey the point: "The matters that are suitable for treatment by the Socratic method are those as to which we have already enough knowledge to come to a right conclusion, but have failed, through confusion of thought or lack of analysis, to make the best logical use of what we know. A question such as 'what is justice?' is eminently suited for discussion in a Platonic dialogue. We all freely use the words 'just' and 'unjust,' and, by examining the ways in which we use them, we can arrive inductively at the definition that will best suit with usage. . . . We can, however, apply the method profitably to a somewhat larger class of cases. Wherever what is being debated is logical rather than factual, discussion is a good method of eliciting truth. . . . Logical errors are, I think, of greater practical importance than many people believe; they enable their perpetrators to hold the comfortable opinion on every subject in turn. Any logically coherent body of doctrine is sure to be in part painful and contrary to current prejudices. The dialectic method—or, more generally, the habit of unfettered discussion—tends to promote logical consistency, and is in this way useful."—Bertrand Russell, *A History of Western Philosophy* (1945), p. 93.

ous producers and consumers create locational patterns of industries, communities, and regions" (p. 4). He introduces the first stage of his discussion by "The most comprehensive approach to an understanding of producers' location, then, is an examination of the typical location problems of the business firm with a payroll" (p 7). Having finished his discussion of this, he begins his next step by "We now inquire . . . into what kind of geographic groupings and spacings this producer and his rivals will develop by virtue of their competition for materials and markets" (p. 47). Then he brings "together the major conclusions of previous chapters as to the locational effects of transfer and processing costs in order to arrive at an understanding of the characteristic industrial patterns of communities and larger areas" and sets about "to show how . . . the locations of different industries coincide, greatly reducing the total number of different locations and giving rise to more or less diversified economic communities with fairly well-defined areas of external influence and characteristic patterns of internal geographic structure" (p. 116).

The above are the traditional stages—the individual economizing units, then the aggregates of units, and finally the bringing together of all into an interdependent system. To the empirical content introduced as constraints in the development of ordinary price and production theory there are added the circumstances: that resources to be used by a firm as well as the consumers to be served are distributed over space so that transfer costs are incurred in procurement and distribution; that transfer costs vary less than proportionally with distance; that the production process results in a product that may weigh more than, the same, or less than the materials for which there is a transfer cost in the assembling. This newly introduced empirical content, like that going into the traditional theory, is of a sort that we might obtain by reflection upon past casual observation, and we might conceive of the theory being similarly developed in a Socratic dialogue by question, answer, and discussion drawing to the surface knowledge already existing in the minds of the participants. The empirical base being very general and the reasoning being essentially common sense, the positively explanatory conclusions are quite general in form and not infrequently *ad hoc* in character. As examples,

> "Just as an iron ball placed between two magnets will roll to one or the other rather than remaining poised in the middle, so the ideal location for a production process on the basis of transfer costs from a single materials source and to a single market will generally be at either the source or the market rather than anywhere between" (p. 31). "If freight rates per ton are anywhere near the same on material and product, such processes involving a high proportion of weight loss are most economically located at or near the source of the material" (p. 32). "In processes involving incorporation of large quantities of some local 'ubiquitous' material like water," there is an incentive for the producer "to locate as near the market as possible . . ." (p. 35). "When a process uses more than one important material or turns out more than one important product, the simple tug-of-war analogy previously developed is inadequate. In this more complicated resolution of locational forces the outcome depends largely on the configuration of transfer routes and the geographi-

cal sequence of sources, junctions, and markets along these routes" (p. 40). "The shape of market or supply areas is influenced by the advantages of different locations for procurement and processing and by the structure of transfer costs. Actual market and supply areas sometimes enclose one another, and usually they overlap" (p. 65). "As a rule it is impossible to ascribe the processing advantages of a site wholly to the quality of any particular factor of production such as land or labor, and the resultant economies may show up in almost any item of the cost statement" (p. 76). "Perhaps the most obvious cases of locational juxtaposition of different industries are those involving a close transfer, *i.e.*, trade, connection between them. . . . Another basis of linkage is a little less direct but not without significance. . . . Two industries using jointly produced materials or turning out complementary products have an incentive to be together" (pp. 118-19). "On the organized transfer network, then, are certain strategically located transfer 'nodes,' with special locational advantages as procurement and distribution points and therefore as processing centers for all kinds of activities in which transfer costs are locationally important. . . . The incentives toward agglomeration of diverse types of business into a relatively small number of clusters at transfer nodes may be summed up under the head of 'economies of urban concentration'. . . . The economies of urban concentration rest on the same basic principles as those of the individual producing unit: multiples, massing of reserves, and bulk transactions" (pp. 119-20). "A community has at least as many 'trading areas' as it has industries. But if we were to map out all these areas around some representative community and arrange them in order of size, they would probably not show a smooth continuous distribution of sizes. . . . Most of the community's trade areas would coincide fairly well with one of a small number of characteristics types. There are, in fact, good reasons for expecting many of a community's retail trade areas to coincide. The out-of-town buyer rarely comes in with just one item on his shopping list. . . . Outside the category of retail trade and services, there seems to be less of a basis for generalized trade areas that fit whole groups of products. . . . The net effect of all these factors of area conformity can best be described as Procrustean. The variety of possible industry and market-area systems is circumscribed and something like a 'hierarchy' of minor and major distributing points exists" (pp. 123-25).

To these may be added certain statements that could possibly be grouped under the heading of "dynamics," but these are assertions, or at most rationalizations of what we see about, many of which ambiguously include undefined concepts, and are not conclusions.

"Ultimately the industry and its main production center 'mature,' in the sense that the rate of growth of market has slackened off, the fundamental questions of product design have been settled, and the necessary specialized machinery has been devised. It is then that a dispersion phase often sets in" (p. 175) ". . . For larger regions . . . economic progress depends eventually on industrialization. . . ." (p. 188). "Areas devoted to the more extensive land uses nearly always develop a 'population pressure' which retards progress and may lead to a vicious circle of economic stagnation

and poverty. . . . Only in a somewhat industrialized region, it seems, is the population sufficiently urbanized to emancipate it from the vicious Malthusian circle of population growth and pressure" (pp. 189-90). "It is particularly noteworthy that where the development of more intensive and efficient production has been arrested, the disability may easily become chronic. Low productivity and population pressure, in a backward economy, join in a vicious circle hard to break" (p. 196).

These statements appear to me to be very weak as formulations of scientific principles. They are qualitative and not quantitative, and if questions were put for which those of the first set are answers, one would expect almost any informed man to give such statements in answer as a matter of informed common sense. The statements in the second set are ambiguous and clearly require closer definition and qualification.

I am of the opinion that the utter ignorance of economists of how an economic system grows and fluctuates "normally," or by virtue of its structure and conditions, precludes our positively prescribing "cures" for "ailments." To speak of maladjustment, instability, imbalance, underdevelopment implies that we can give operational meaning to adjustment, stability, balance, and optimum development, defining these concepts in terms other than words that beg the question. If what appears to be pathological performance of the system is being discussed with policy action in view, there is no doubt but that a person having the qualifications of the author of this book may contribute much. But the contribution to be made is primarily negative—in helping, so to speak, to keep things straight as the discussion of the social problem proceeds: calling attention to the ambiguity of terms used in the discussion, to apparent facts that conflict with assertions that are made, to logical inconsistencies in arguments used, to the fundamental ignorance that prevails regarding matters of which knowledge is presupposed in an argument; demonstrating that a particular conclusion drawn is not the only conclusion to be drawn and that alternative ways of explaining some phenomenon may imply a policy different from that proposed, that a particular way of measuring magnitudes fails in giving the information necessary to clear away an issue, that some other computation made upon the data is relevant with respect to the issues involved, that crude ratios computed for arbitrary areas can give erroneous impressions. But in his Part IV, "Locational Objectives and Public Policy," Mr. Hoover, in my opinion, has contributed little along these lines, and the words in which he defines his concepts seem frequently to me to be themselves undefined (for example, the definitions of "locational stability" [p. 280] and of "locational balance" [p. 282]).

This field of the spatial aspects of the structure and workings of an economic system I regard as an exceedingly important field for empirical research. Regularity and order, in a statistical sense, do seem in evidence. A definite size distribution of population agglomerations has been maintained throughout the growth of the system as a unit. There apparently is an order about the spatial distribution of these concentration points that we call cities. To each center is associated a roughly definable hinterland including subcenters. The inner workings, the systematic dove-tailings of activities, and the evolutions of

growth and fluctuation appear more and more complex the more one attempts even to describe them, quite apart from explanation and analysis. The better empirical work, I think, is more interesting for the questions raised than for the questions settled, and these questions turn more upon what aspects should be measured and upon the appropriate definitions of measures.

The point of view of what I regard as the more promising empirical work is that of positive science, and not of social discussion, and the problem of describing and analyzing is a quasi-engineering problem. The speculative conception is that of an organism having mechanical features in its concrete structure and in its system of flows. The acting units, to be sure, are economizing individuals and agencies, subject to the constraints of physical conditions.

Economists have typically denied that they as professional practitioners are even supposed to possess specialized knowledge by which they might show an economizer how to economize. This is supposed to be the special province of the engineer, and there seems to be ample room for a division of labor between engineering problems and the fundamentally different problems encountered in the evaluative discussion of economic conflict. But describing, explaining, and analyzing a mechanism is also an engineering type of problem, and I am convinced that the mode of reasoning and study characteristic of conventional economics is not well adapted for the task.

For example, Mr. Hoover explains the fundamental agglomeration process in section 5.6, "Economies of Concentrated Production," and section 8.4, "The Principles of Large-Scale Economy Applied to Urban Concentration of Production." His explanation consists of a conventional account of the economies of large scale production, a listing of plausible reasons for people doing what they are observed to have done. But it is not the kind of analysis that a choice of a course of action could be based upon, containing no actual estimate of economies as predictions and demonstrating no specific dependence upon variables the measures of which are specified. The economies to be attained through the concentration and enlarging of operations are in fact analyzed but not through the application of conventional economic theory. Illustrations of analytical solutions to real problems of this sort may be seen in William Feller's *An Introduction to Probability Theory and Its Applications*, "A Telephone Trunking Problem (pp. 143-44)," and "Servicing of Machines (pp. 379-84)," especially Tables 3 and 4. These particular practical problems are relatively simple, but the ideas involved in their solution are in principle applicable to a wide variety of service, waiting line and inventory problems.

I see no immediate application of these ideas in some grand analysis of the spatial ordering and inner workings of economic communities. At present, we can systematically describe but we cannot analytically explain in the sense that I think this term should be used. But it is the kind of theory contained in Feller's book that, to me, seems most suggestive of ways and means of arranging our data for positive study, whereas I see little to build upon in the theory presented in Mr. Hoover's book. Put in a different way, the point that I raise is this: if economists by training and profession are not equipped to

answer or solve in analytical terms the practical problems of the economizer, how do they presume to be able to solve the apparently much more complex quantitative problems involving alternative courses of action by society in the control of entire systems of economizers? Economists who aspire to analytically explaining a mechanism should be trained for the job, and it is an engineering type of problem. Other economists should make a point of calling attention to the palpable fact that success along this line constitutes, in itself, no resolution of an economic problem.

In closing, I shall point again to the fact that of those reviews of this book that I have read, all have been favorable, and thus the present review is unrepresentative. I may also add that the empirical work that I had in mind as promising and interesting contains acknowledgment of heavy credit due to Mr. Hoover for stimulation and guidance.

RUTLEDGE VINING

University of Virginia

Our Farm Program and Foreign Trade: A Conflict of National Policies. By C. ADDISON HICKMAN. (New York: Council on Foreign Relations. 1949. Pp. xii, 108. $2.00.)

One of the greatest inconsistencies in the whole range of this country's governmental policies is to be found in the conflict between American foreign trade policy and our domestic agricultural program. On the one hand, we have been actively promoting the expansion of world trade through negotiations for the reduction of tariffs and the removal of non-tariff trade barriers. On the other hand, we have resorted to import restrictions and export subsidies in an effort to carry out an agricultural program which has involved the supporting of domestic farm prices at levels well above world prices. As a result, our representatives in international trade negotiations have found themselves, at times, in the peculiarly embarrassing position of leading the struggle for qualifications and exceptions to the basic principles for which they were seeking acceptance. And American consumers have paid the price, not only in the now-familiar combination of high-food-prices-plus-high-taxes-to-pay-for-these-high-prices, but also in the sacrifice of benefits which might have accrued from an all-out program to reduce trade barriers.

Professor Hickman's book is an attempt to summarize the nature of this conflict and to suggest possible modifications in present government policies which might at least reduce the degree of conflict. In so far as the book is intended for the layman or student, it is a highly successful performance and should contribute a great deal to public understanding of a group of complex economic problems. For the specialist in this field, it covers familiar ground. The chapter on "Reforming Farm Policy," which discusses various proposed modifications of present farm policies, is quite sketchy and contributes little, if anything, to the evolution of ideas in this area. Particularly in the section on "direct income payments," one wishes that greater attention had been paid to certain fundamental distinctions. If the ultimate objective is to restore to agricultural prices their normal function in a market system, it makes a great deal of difference whether income payments to farmers are or are not

associated with price "goals" of any type. Again, there are important differences between the concept of income parity and the use of income payments strictly as a counter-cyclical device.

Since we seem to be moving in the direction of a greater emphasis on income payments, clear thinking on these points is essential. The political realities of the farm situation being what they are, progress in this direction is inevitably slow and halting, as Professor Hickman is careful to point out. The mere fact that the old, rigid concept of price parity is being seriously questioned, however, not only by government and academic economists, but also by legislators and farm organizations, is in itself a very large step forward.

MARGARET S. GORDON

Institute of Industrial Relations
University of California, Berkeley

Labor

Industrial Peace in Our Time. By HUBERT SOMERVELL. (New York: Macmillan. 1950. Pp. xix, 224. $2.50.)

Like many before him, Mr. Somervell endeavors to define the cause and cure of social disharmony. He locates the origin of the difficulty in the breakdown of medieval economic organization, and seeks to remedy the situation by reintegrating the workers into a reconstituted form of economic enterprise.

The trouble with present-day economic organization, according to Mr. Somervell, is not that the worker is separated from the means of production but that he has lost control over the finished product. The solution is to be found not in any regulation exercised from outside the industrial structure, such as collective bargaining, but in the re-establishment of an industrial partnership centered in common ownership of the finished product. To this end he proposes that the wage-rate system be abolished and that existing enterprises be reconstituted as "Federal Share Production Companies." Since "conflict and the restrictive practices of opposing interests can find no place in a relation between partners"; and since "partnership remuneration is that form in which set proceeds are divided in a fixed ratio"; and since in any event, despite the camouflage of the wage rate system, income is actually distributed in such fixed ratios, the various functional groups in the Share Production Company (workers, managers and capitalists) will each receive an agreed-upon proportion of the total income. The question of differential earnings as between workers will be largely delegated to the labor organization, which will be known as a Work Share Union rather than a Trade Union because it will emphasize positive cooperation rather than conflict, defense and restriction. Likewise, the managerial personnel will be appropriately classified with each category receiving its percentage quota.

In addition, the labor force will be divided into four hierarchical status groups enjoying different degrees of security and privilege. The main body of workers, those between approximately 25 and 55 years of age, will be in the Permanent Labor Group, protected against layoff and entitled to 52 weekly payments per year on a drawing-account system. Younger persons in

the Training Labor Group and the Qualified Labor Group will absorb any necessary unemployment, on a share-the-work basis, but may look forward to membership in the Permanent Group; while senior workers in the Continuing Labor Group, although exempt from layoffs, will be subject to retirement on pension.

Industrial managers will retain operating control but a new concept of stewardship will govern their activities. "A proper recognition of labor's functional ownership will require Management no longer to organize, plan and administer the company solely to provide the shareholder with the largest possible increasing return on his investment, but to carry out these functions in such a way as will also provide the main labor force with a continuous and secure livelihood." Mr. Somervell argues that this realignment of the managerial function has already been achieved in companies such as Nunn-Bush and Procter and Gamble which have introduced guaranteed annual wage plans. He points out that certain production and marketing policies had to be revised in order to accommodate the guarantees, and states that "if these changes are broken down to their ultimate meaning, the obligation assumed by the management is seen to have immensely extended Labor's control over the organization and administration of the business. But such increased control did not involve any principle of worker management."

Industrial Peace in Our Time carries a brief but significant introduction by the late Elton Mayo. Somervell's program of organic solidarity is reminiscent of Mayoism, and, likewise, the fact that, although not relying so heavily on the verbal magic of "communications," he largely ignores the structural and institutional realities of modern economic life. In the absence of any demonstration of social forces or processes which might bring about the kind of reconstruction he desires, it would seem rather beside the point to undertake any detailed criticism of his proposals.

Arthur M. Ross

University of California

Population; Social Welfare and Living Standards

Royal Commission on Population: Report. CMD 7695. (London: H. M. Stat. Office. June 1949. Pp. xii, 259. 4*s*., 6*d*.)

British interest in population trends and possible consequences resulted in the appointment of a Royal Commission on Population in 1944 "to examine the facts relating to the present population trends in Great Britain; to investigate the causes of these trends and to consider their probable consequences; to consider what measures, if any, should be taken in the national interest to influence the future trend of population and to make recommendations." The Commission appointed three specialist committees—statistics, economics, and biological and medical. A family census was taken in 1946 because the latest such census was in 1911. The Commission issued its report in 1949.

Because the net reproduction rate may fluctuate sharply, the Commission studies movements in average family size instead. This new approach is one

of the outstanding contributions of the *Report.* The excess of births over deaths has risen to a very high level and the net reproduction rate has been well above unity. This may be attributed to two factors, younger marriages and the concentration in the period 1944 to 1948 of births deferred from the earlier war years. "The net reproduction rate makes no allowance for such influences as these and is therefore not a good measure of the fundamental trend inherent in the habits of the population. The influence of changes in marriage habits on the annual number of births cannot be both large and lasting, unless the size of the family increases; and of this there has hitherto been no convincing sign. It is to the size of the family that the notion of a replacement percentage can most appropriately be attached."

The Commission calculates that the size of the family has been comparatively stable over the past twenty years at about 2.2 children per married couple. If the marriage rate remains roughly at the level of 1942-1947, the Commission concludes that the deficiency in the present size of the family below that required in the long run for replacement is about 6 per cent. "There is certainly some deficiency. On the other hand it is equally certain that the deficiency is not nearly as great as the pre-war reproduction rate calculations suggested" (p. 221).

The Commission considers that the prospective change in the relationship between producers and consumers in the second half of the twentieth century will be damaging to Britain's economic position. The changing pattern of birth rate and mortality will increase the proportion of consumers to producers. Consequently, "it makes sound economic policy all the more necessary, increases the importance of productivity, and reduces the margin for waste or inefficiency. It is important that those determining economic policy (whether within or without the government) should realize that one process which has substantially assisted in the raising of standards of life over the last two generations has now ceased, and that in the future the tide will be flowing the other way" (p. 112).

Even if future mortality shows no reduction from the present levels, the Commission states that the number of people over 65 may be expected to grow from 5.0 millions in 1947 to 7.3 millions or more in 1977. With a fall in the death rate, the number over 65 would be even greater. This increase in the aged will occur during a period when the labor force may even decline. The ageing population will more than double retirement pensions, give added strength to that group as a political force, and increase competition for advancement in industry. It may lead to an unprogressive society, falling behind not only in technical efficiency and economic welfare, but also in intellectual and artistic achievement. "Our own view is that the danger of losing the qualities that make for progress, while not overwhelming, is sufficiently real to provoke serious consideration. Certainly, we need to be aware of the difficulty, and to let our arrangements be such as to give every chance to the reduced supply of youth and enterprise which will be available to us in the future" (p. 121).

The projections of population trends are continued to 2047, and three such

estimates are made. The first, a low one, assumes that the family size will fall to 80 per cent; the second, a medium one, assumes that family size will remain constant; and the third, a high one, assumes an increase of 6 per cent in family size. It is also assumed that mortality will continue to fall and that the marriage rates will remain roughly constant at the level of 1942-1947. On these assumptions, the population which was 48.2 million in 1947 will lie between 48.6 and 51.8 million in 1977. The number over 65 will constitute about one-sixth of the population as against one-tenth in 1947. Total population will reach a maximum about 1977 and a slow decline will follow. If the average family size remains the same, the population of working age will remain roughly constant till 1977 and will then also decline. The average age will increase at least three years by 1977. "The future ageing which can be confidently predicted must not be thought of as being due primarily or even substantially to the fact that the average size of the family has fallen below the level required for full replacement. For the most part it represents merely the balance of the adjustment of the age-structure of our population to the decline in mortality since the 19th century, combined with the fact that the growth of our numbers is coming to an end. The bulk of it would still take place even if average family size were to remain steadily at full replacement level from now onwards" (p. 223).

Policy recommendations are made to assist parenthood. The Commission believes that parents are unfairly handicapped and that this reflects a long term trend of overlooking the needs of the family. Measures to correct these handicaps are considered justified on grounds of equity and social welfare as well as to maintain a replacement size of the family. In proposing financial assistance, the Commission recommends that the relative economic position of the family in effect since 1938 be maintained, that aid be based on equal assistance to parents of all classes and income levels, and that parents in the higher and upper medium-income ranges be entitled to such further tax reliefs as can be justified on grounds of fiscal equity. Under family services, home helps are recommended, such as nursery schools, improved laundry facilities, holidays for mothers and maternity and prenatal care services. Housing should stress family needs and city planning should include facilities for family recreation.

The *Report* has met with favorable reception generally. The Liberal Party, which had conducted a brief survey of its own on population trends, has expressed general pleasure with the report, pointing out that the principle of allowances for children as proposed by the *Report* has been an official party policy since 1941. The *Report* has been criticized as being meek, ineffective and politically expedient in its policy recommendations. Some have criticized its treatment of problems such an international balance of payments and employment without quantitative assessments of the effects of population changes upon these factors. Catholic organizations have criticized its emphasis on voluntary parenthood. Despite these criticisms, the *Report* has made a valuable contribution to the analysis of present population trends. It has arrived at conclusions quite different from prewar considerations, the magnitude of the projected decline in British population and the dates of the turning points

being different. To some extent, these differences are due to new evidence. But the new conclusions are mainly due to the methodology which is the greatest contribution of the *Report*. Forecasts on the basis of the net reproduction rate are rejected because of their sharp fluctuations; instead, movements in average family size are considered more appropriate for study of population trends and their probable consequences.

NATHAN BRODSKY

Washington, D.C.

The Law of Unemployment Insurance in New York. By DAVID COLIN. (New York: New York University Institute of Labor Relations and Social Security. 1950. Pp. xxiv, 412. $6.00.)

Centuries ago the Mercantilists demonstrated, and later Friedrich List and others impressed the importance of public administration which could fulfill or pervert the intention of the legislature. Through the years the truth of this preachment has been exemplified, until administrative agencies, extended and articulated, have their own bodies of legal precedent.

Professor Colin has explored the portion of this field which, more than others, is close to the average citizen and bears immediately upon the functioning of the economy. The book is remarkable for its combination of minute and multifarious detail with preservation of perspective and comment on major matters of policy past and future. The amount of scrutiny of cases in order to extract from them significant features of fact and decision was manifestly enormous. Without cluttering his pages, Professor Colin has presented the infinite variety of circumstance which demanded to be fitted into just and workable principles. So much of economic exposition is vague and seemingly timeless. Here, for a grateful change, the author offers a local habitation and a name.

Administrators of unemployment insurance in all states and in other countries will find this study fascinating reading, for it is prepared and set forth with intimate acquaintance and yet detachment of judgment. Experience or merit rating is not so much assaulted as it is undermined in the constant argument of the author and the illuminating introduction and appendix supplied by Professor Herman A. Gray. Unhappily, almost at the moment of appearance of the book, New York seems on the point of joining the other states in resort to a fallacy which is near kin to the old notion of individual sin or virtue being responsible for economic fortunes. Even this error, popular as it is, may in time be abandoned, and then the wise advice of Professor Colin and his friends will be honored in the observance.

Generally, the administrative machinery of unemployment insurance in New York, as planned and functioning, is approved, especially the provision for appeal to an independent administrative tribunal. The volume is so rich and varied that one is thankful for the unusually full index which permits instant and accurate use of the material and views presented.

BROADUS MITCHELL

Rutgers University

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NOTES

The annual meeting of the American Economic Association will be held at the Hotel Statler, Boston, Massachusetts, December 27-29, 1951. Arrangements this year are again being made on an independent rather than a joint basis, in accordance with the plan adopted in December, 1949. Alfred C. Neal, vice president of the Federal Reserve Bank of Boston, has been appointed chairman of the local arrangements committee. The president of the association, Professor John H. Williams, is responsible for the program and would appreciate suggestions of topics and speakers.

The following have been appointed members of the Association nominating committee for the current year: Howard S. Ellis, University of California, Chairman, Karl R. Bopp, Federal Reserve Bank of Philadelphia, George A. Elliott, University of Toronto, Charles P. Kindleberger, Massachusetts Institute of Technology, Lloyd A. Metzler, University of Chicago, and William H. Nicholls, Vanderbilt University. The chairman of this committee would appreciate receiving suggestions for officers for next year.

OFFICERS OF ALLIED SOCIAL SCIENCE ASSOCIATIONS

American Accounting Association: Charles J. Gaa, University of Illinois, College of Commerce and Business Administration, Urbana, Illinois, secretary-treasurer.

American Association of University Teachers of Insurance: Erwin A. Gaumnitz, University of Wisconsin, Madison, Wisconsin, president; J. Edward Hedges, Indiana University, Bloomington, Indiana, secretary-treasurer.

American Business Law Association: John F. Sembower, Northwestern University, Chicago, Illinois, president; Matthew Dogan, Indiana University, Bloomington, Indiana, secretary-treasurer.

American Farm Economic Association: F. F. Hill, Cornell University, Ithaca, New York, president; L. H. Simerl, 305 Mumford Hall, University of Illinois, Urbana, Illinois, secretary-treasurer.

American Finance Association: Raymond J. Saulnier, Columbia University, New York 27, New York, president; Edward E. Edwards, Indiana University, Bloomington, Indiana, secretary-treasurer.

American Marketing Association: Everett R. Smith, Macfadden Publications, 205 East 42nd Street, New York 17, New York, president; George H. Brown, University of Chicago, Chicago 37, Illinois, secretary.

American Political Science Association: Peter H. Odegard, University of California, Berkeley 4, California, president; Edward H. Litchfield, 1785 Massachusetts Avenue, N.W., Washington, D.C., executive director.

American Sociological Society: Robert C. Angell, University of Michigan, Ann Arbor, Michigan, president; John W. Riley, Jr., Rutgers University, New Brunswick, New Jersey, secretary.

American Statistical Association: Lowell J. Reed, Johns Hopkins University, Baltimore, Maryland, president; Samuel Weiss, 1108 16th Street, N.W., Washington 6, D.C., secretary-treasurer.

Econometric Society: R. G. D. Allen, Department of Statistics, London School of Economics, Houghton Street, Aldwych, London W. C. 2, England, president; William B. Simpson, University of Chicago, Chicago 37, Illinois, secretary.

Economic History Association: Earl J. Hamilton, University of Chicago, Chicago 37, Illinois, president; Ralph W. Hidy, Department of History, New York University, Washington Square, New York 3, New York, secretary.

Industrial Relations Research Association: Robben W. Fleming, University of Illinois, Urbana, Illinois, secretary-treasurer.

Institute of Mathematical Statistics: Paul S. Dwyer, University of Michigan, Ann Arbor, Michigan, president; C. H. Fischer, University of Michigan, Ann Arbor, Michigan, secretary-treasurer.

Midwest Economics Association: Paul R. Olson, Department of Economics, University of Iowa, Iowa City, Iowa, president; C. Woody Thompson, Department of Economics, University of Iowa, Iowa City, Iowa, secretary.

Rural Sociological Society: Robert A. Polson, Department of Rural Sociology, Cornell University, Ithaca, New York, president; Randall C. Hill, Department of Economics and Sociology, Kansas State College, Manhattan, Kansas, secretary-treasurer.

Deaths

Harold Hitchings Burbank, February 6, 1951.

Carl J. Ratzlaff, March 22, 1951.

William Walker Swanson, July 21, 1950.

Appointments and Resignations

Gardner Ackley, of the University of Michigan, is serving as economic adviser to the administrator of the Economic Stabilization Agency.

Karl M. Arndt has been granted extended leave from the University of Nebraska to continue as a member of the staff of the Council of Economic Advisers to the President.

Thomas Balogh, of Balliol College, Oxford, will be visiting professor in the summer session of the University of Minnesota.

Mandell M. Bober has been appointed visiting professor of economics in the School of Business Administration of the University of Buffalo.

Robert T. Bower has been appointed director of the Bureau of Social Science Research of The American University, Washington, D.C.

Hazel D. Brown has been lecturer in marketing in the College of Commerce and Business Administration, Tulane University, in the past semester.

K. A. H. Buckley has been appointed assistant professor of economics at the University of Saskatchewan.

Eveline M. Burns was visiting lecturer in the department of economics and social institutions, Princeton University, during the spring term.

Philip W. Cartwright, on leave from the University of Washington, is serving in the regional Office of Price Stabilization in Seattle.

Jay F. Christ retired as associate professor of business law, School of Business, University of Chicago, in September, 1950.

Ronald H. Coase, of the London School of Economics, has accepted an appointment as professor of economics and industrial organization in the School of Business Administration, and professor of economics in the College of Arts and Sciences, University of Buffalo, effective September, 1951.

W. S. Connor has returned to the University of Kentucky after spending two years in research and study at the University of North Carolina.

Paul D. Converse has been engaged in research study while on sabbatical leave from the University of Illinois in the past semester.

J. D. Cook, Jr., has been promoted to the rank of assistant professor of economics at Denison University and will be acting chairman of the department of economics during the academic year 1951-52.

James Crutchfield, on leave of absence from the University of Washington, is working with the regional Office of Price Stabilization in Seattle.

Marion G. Daniels, of the University of Texas, has accepted a position as instructor in economics at the Universidad Autónoma de El Salvador in San Salvador.

Bernard W. Dempsey, S.J., of Saint Louis University, has been appointed professor of economics at the newly organized Nirmala College, University of New Delhi, India.

Laurence de Rycke has been promoted to professor of economics at Occidental College.

Evsey Domar, of Johns Hopkins University, was visiting associate professor of economics at the Russian Institute, Columbia University, in the spring semester.

George H. Ellis, on leave from the University of Maine, is acting as industrial economist in the Federal Reserve Bank of Boston.

Donald A. Gardiner has resigned as assistant professor of statistics at the University of Tennessee to take up active duty in the U.S. Navy.

John H. Goff, of the School of Business Administration, Emory University, has been awarded a fellowship by Swift and Company for study of the meat industry in Chicago.

Howard K. Grasher has been granted leave of absence from the University of Nebraska to enter active service with the Nebraska Air Guard.

David Green has been appointed instructor in business administration in the School of Business, University of Chicago, effective in October.

Herman A. Gray was visiting lecturer in the department of economics and social institutions, Princeton University, in the spring term.

H. W. Hargreaves has returned to the University of Kentucky after a year spent in research for the Twentieth Century Fund.

John D. Helmerger, of the University of Minnesota, has accepted an appointment as economist in the Minneapolis regional Office of Price Stabilization.

Howard B. Hovda, of the University of Minnesota, is serving as economist in the Minneapolis regional Office of Price Stabilization.

Jack Howard has been granted leave from the University of Illinois to teach at the University of Chicago in the year 1950-51.

Arthur D. Jacobsen has accepted an appointment as statistician in the Records and Statistical Division of the Directorate of Flight Safety Research of the U.S. Department of Air Forces.

T. A. Judson has been appointed instructor in economics at the University of Saskatchewan.

Donald R. Kaldor has returned to Iowa State College after a year's assignment in the Office of International Trade, Department of Commerce.

Nathan Katz has formed his own management counseling firm and is conducting a graduate seminar at New York University.

A. H. Keally has been promoted from associate professor to professor and head of the industrial management department of the College of Business Administration, University of Tennessee.

Oswald Knauth was on leave from the School of Business, Columbia University, in the spring session to serve with the National Production Authority, Washington, D.C.

Homer C. Lewis is on leave from the University of Kentucky to serve as price executive in the Louisville Office of Price Stabilization.

Edna C. Macmahon has been promoted to professor of economics at Vassar College.

Donald J. May has returned to Emory University after a year's leave of absence for graduate study at the University of Chicago.

Frank McDonald has resigned as instructor in economics at the University of Maine.

John S. McGee has been appointed lecturer in economics at the University of California, Los Angeles.

Leon N. Moses has resigned from Northwestern University to accept a position as economist in the Industrial Division, Tennessee Valley Authority.

James Moyer, of the University of Illinois, has been appointed instructor at the State University of Iowa.

Richard A. Musgrave, of the University of Michigan, has been appointed a Guggenheim fellow for the year 1951-52. He will go to Germany this summer as co-chairman of a fiscal mission sponsored by the Economic Cooperation Administration under the Technical Assistance Program.

Eastin Nelson, on leave from the University of Texas, is working with the Klein-Saks Economic Mission in Peru.

James R. Nelson has been promoted from associate professor to the Charles E. Merrill professorship of economics at Amherst College.

Edwin G. Nourse, former chairman of the Council of Economic Advisers to the President, conducted special graduate seminars at the University of Minnesota in May.

Ragnar Nurkse, of Columbia University, will lecture and conduct a faculty seminar at the National Faculty of Economic Science, University of Brazil, Rio de Janeiro, this summer.

Jacob Perlman, of the Social Security Administration, has been appointed a member of a Technical Mission of the United Nations to the Republic of Colombia.

Armand L. Perrault, Jr., has been instructor in accounting and economics in the College of Commerce and Business Administration, Tulane University, in the past semester.

Florence Peterson has resigned as director of the graduate department of social economy at Bryn Mawr College.

Paul Randolph has been appointed instructor in statistics at the University of Minnesota.

A. N. Reid has been promoted to associate professor of economics at the University of Saskatchewan.

Frederick G. Reuss has been promoted from associate professor to professor of economics at Goucher College.

Jennie Richmond has resigned as instructor in economics at the University of Maine.

Roderick H. Riley, formerly special assistant in the Office of the Secretary, Department of Commerce, has been named officer-in-charge of the Trade and Resources Division, Office of German Economic Affairs, Department of State.

Harry V. Roberts has been promoted to assistant professor of business administration in the School of Business, University of Chicago.

Marshall A. Robinson has been appointed assistant professor of economics at Tulane University.

George F. Rohrlich, formerly with SCAP in Japan and more recently research associate with the National Planning Association, has been appointed chief, Disability Research Branch, Bureau of Old-Age and Survivors Insurance, Social Security Administration, in Baltimore.

Simon Rottenberg, of the University of Puerto Rico, delivered a series of lectures in Antigua, British West Indies, in March, under the auspices of the University College of the West Indies.

Wilson E. Schmidt has been appointed acting executive officer of the department of economics, George Washington University.

Oscar N. Serbein, Jr., has been promoted to assistant professor of statistics in the Graduate School of Business, Columbia University.

Ezra Solomon has been promoted to assistant professor of business administration in the School of Business, University of Chicago.

J. Owen Stalson will conduct a course in life insurance management problems at the Graduate School of Business, Columbia University, in the academic year 1951-52.

George J. Staubus has been appointed instructor in business administration in the School of Business, University of Chicago.

George W. Summers, formerly of the University of Minnesota, has accepted an appointment in the Division of Research and Statistics of the Prudential Insurance Company, Los Angeles.

Lorie Tarshis, of Stanford University, was visiting professor of economics at the University of Washington in the spring quarter.

Mabel F. Timlin has been promoted to professor of economics at the University of Saskatchewan.

Donald S. Tucker, retired from the Massachusetts Institute of Technology, has been visiting professor of economics at DePauw University in the past semester and will return to the Massachusetts Institute of Technology as special lecturer in the first semester of next year.

Daniel C. Vandermeulen will be on leave from Claremont Men's College the coming year to engage in research on an award from the John Randolph Haynes and Dora Haynes Foundation.

Willis D. Weatherford, of Swarthmore College, is spending the spring and summer in India, Pakistan and other countries offering opportunities for economic development, on a mission for the American Friends Service Committee.

Ernest H. Weinwurm has been appointed associate professor of management in the Graduate School of Stevens Institute of Technology.

W. Tate Whitman has been promoted from associate professor to professor of economics in the School of Business Administration, Emory University.

Edwin E. Witte delivered a series of lectures in San Juan, Puerto Rico last fall under the auspices of the Labor Relations Institute of the University of Puerto Rico.

Harold Wess, of the Graduate School of Business, Columbia University, is serving as director of the Consumer Durable Goods Division of the Office of Price Stabilization in Washington, D.C.

VACANCIES AND APPLICATIONS

The Association is glad to render service to applicants who wish to make known their availability for positions in the field of economics and to administrative officers of colleges and universities and to others who are seeking to fill vacancies.

The officers of the Association take no responsibility for making a selection among the applicants or following up the results. The Secretary's Office will merely afford a central point for clearing inquiries; and the *Review* will publish in this section brief descriptions of vacancies announced and of applications submitted (with necessary editorial changes). It is optional with those submitting such announcements to publish name and address or to use a key number. Deadlines for the four issues of the *Review* are February 1, May 1, August 1, and November 1.

Communications should be addressed to: The Secretary, American Economic Association, Northwestern University, Evanston, Illinois.

Vacancies

Investment counsel: For our investment counsel work, we would like to hire a man of outstanding intellectual ability to be trained in the study of investment opportunities and in the valuation of investment securities. The only requirements are that he should have a degree in economics, statistics, or finance and he should have a university record ranking him in the top 10 per cent of his class. A lady might be considered for this work if she were outstanding. However, it is desirable, also, that the man should have some experience in the purchase and sale of stocks and bonds and that he should be exempt from call for military service. Templeton, Dobbrow & Vance, Inc., 30 Rockefeller Plaza, New York 20, N.Y.

Economists Available for Positions

Consumer economics, economic and social movements, international economic problems, social security, public finance, money and banking, social science, theory, sociology: Man, 49, married, Ph.D., Illinois, with minor in philosophy. Eighteen years of college teaching experience, courses in marriage and the family as a specialty; 7 years of industrial experience; 1 year of social work. E127

Principles of economics, advanced economic theory, money and banking, history of economic doctrines, comparative economic systems, international economic problems: Lady, Ph.D. (*summa cum laude*), University of Basle. International background; many languages; studied in Vienna and Switzerland. Twenty years of teaching experience as lecturer at Geneva University, Switzerland; 4 years in this country on graduate and undergraduate level, East and West; 3 years as head of department of economics in Western liberal arts college. Substantial research work; author of several books and numerous contributions to scientific periodicals. Interested in full or visiting professorship in economics in university or high-ranking college or collaboration with bureau of economic research. American and European references. E283

Economic principles, economic and social theories, economic and social institutions, labor, industrial organization, research or supervision of research, principles of sociology, social welfare and social legislation, social and economic history of Near East: Woman, Ph.D., foreign and American education. Three years of teaching experience; 4 years of experience in business administration. Seeks research or teaching position. E288

Economic theory, monetary economics, business cycles, international economics, economic history: Man, 30, married, Ph.D. residence completed at Columbia University. Five years of teaching and administrative experience in Eastern colleges; 2 years of experience in economic research. Seeks teaching or research position. Available in summer or fall, 1951. E292

Economic theory, history of economic thought, business cycles, capital and labor problems, international trade, comparative economic systems: Man, 45, European, three German degrees, including doctor's. Fifteen years of university teaching experience; original contribution to the theory of economics; author of several works in three languages; excellent criticisms and recommendations from many university professors. Wishes position in economics. E317

THE AMERICAN ECONOMIC REVIEW

PAUL T. HOMAN, Managing Editor
DORIS MERRIAM, Assistant

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THE CONSTRUCTION OF A NEW THEORY OF PROFIT

By JEAN MARCHAL*

Most modern authors define profit as the *income of the firm* as such or as the *price paid for performing the function of enterprise*. This has not always been the case, however. Adam Smith, the founder of the classical school—so little a classicist himself—shows profit as the income of the capitalist entrepreneur, that is, as the income of the individual owner of a capital sum who uses this capital to hire workers, buy machines and manufacture products which he sells on a market. But after Smith have come a whole series of authors, from Say to the most modern neoclassical theorists, who have in one way or another, with all the resources of excessively atomistic analysis, dismembered Smith's basic idea. In profit, as Smith defined it, they treat as separate elements the interest which remunerates the capital provided by the entrepreneur himself and the wage which pays for his labor of direction and coordination of the factors of production. In the income of the entrepreneur, designated as *gross profit,* they isolate, after eliminating the interest on the entrepreneur's own capital and a wage for his labor of direction, a *net profit* which seems to them to be pure profit and which they then proceed to try to explain.[1]

The procedure we have just described presents in our opinion very serious difficulties. No anatomist who had dissected a cadaver and assembled in the proper order the heart, liver and entrails would dare to maintain that he had reconstructed the man. Everyone knows that analyzing the various organs which comprise a man does not enable us to understand the man completely. To understand a man it may be

* The author is professor of economics at the University of Paris. This article has been translated from the French version by Richard M. Davis, assistant professor of economics at Lehigh University.

[1] See, for example, G. Pirou, *Economie Libérale et Economie Dirigée* (Paris, 1938), Pt. I, p. 187.

desirable to study his component parts one by one, but we must never forget that the anatomical pieces are not put together like the parts of a machine and that the living man is more than an assemblage of organs. Atomistic analysis can be useful. It has limits, however, and those who are not aware of those limits risk being their victims. A *global analysis,* a direct apprehension of the totality, is always necessary.

Accordingly, when we discuss profit we find that in practice entrepreneurs in computing their costs do not include in those costs a salary for their own labor of direction and interest on their own capital, all calculated at the prices which these factors could command on the market. What they call profit and what influences their activity is the *gross amount* which remains in their hands when their collaborators have been paid. This gross sum appears to them to remunerate all at once, without any distinction, everything which they have furnished to the enterprise. The man who receives this, in other words, is not a combination in one person of functionaries termed laborer, capitalist and enterpriser, but rather is an individual who, attracted by the prospect of gain, independence and the possibilities of command and initiative which he might exercise as the head of an enterprise, must, to fulfill that function, possess certain personal qualities, be capable of certain decisions, be able to assume certain risks and have at his disposal sufficient capital. *Our observation of the real world then shows us only gross profit* or *entrepreneurial income.* Net profit, wages of management, interest on the entrepreneur's own capital correspond to nothing real. They are the invention of ivory-tower economists.

But even granting all this, we have still missed, for our purpose, the essential point. A second step is necessary. This consists in observing that entrepreneurs obtain remuneration for their activity in a very different manner than do laborers or lenders of capital. The latter provide factors of production which they sell to the entrepreneur at prices which they naturally try to make as high as possible. The entrepreneur proceeds quite otherwise; instead of selling something to the enterprise *he identifies himself with the enterprise.* Some people doubtless will say that he provides the function of enterprise and receives as remuneration a sum which varies according to the results. But this is a tortured way of presenting the thing, inspired by an unhealthy desire to establish arbitrarily a symmetry with the other factors. In reality, the entrepreneur and the firm are one and the same. His function is to negotiate, or to pay people for negotiating under his responsibility and in the name of the firm, with two groups: on the one hand, with those who provide factors of production, in which case his problem is to pay the lowest prices possible; on the other hand, with the buyers of

the finished products, from whom it is desirable to obtain as large a total revenue as possible. To say all this in a few words, the entrepreneur, although undeniably providing a factor of production, perhaps the most important one in a capitalist system, is not himself to be defined in those terms. As a consequence of the particular nature of the factor which he provides he acts essentially as an *interruptor in the price circuit*. For us, the entrepreneur is, above all, an individual who in response to the dictates of the circumstances of production, and within the framework of those circumstances, tries to introduce or to maintain a difference between his selling prices and his buying prices or costs of factors. His first purpose, one might say his mission, is to prevent these two price-groups from coming together.

How is this done? Essentially, and this is our third point to clarify, by *acting on the market structure*.

The classical economists confidently maintained and their successors still profess to believe that entrepreneurs appear in the various markets where they buy and sell factors and products, always respecting the rules of the game as they have been formulated—that is, that they simply try to buy at the lowest prices and sell at the highest prices possible *within the established market structures*. But that never has been the case, and if it had been, profits would be at levels infinitely lower than those which have actually been reached. Always, and more and more, to the extent that capitalism has developed, entrepreneurs have tended, in order to increase their gains, to *act on the structure of the markets* where they operate, whether these are labor markets or capital markets or markets for finished products.

To accomplish this purpose, they have made every effort to increase the importance of their own firms; they have made alliances with each other; they have tried, by methods which have not always been legal, to mobilize to their advantage certain elements of the public authority. It has been possible for them, consequently, to attain several ends: to go beyond the limited sphere of individual action and to influence the total supply of products or the total demand for factors in the markets in which they participate; or, rather, to act, by methods which we shall describe, on the total demand for products and the total supply of factors with which they are faced so as to modify the preferences and the possibilities for action of those parties with whom they must contract; in short, to transform, for the furtherance of their own interests, the circumstances in which these negotiations take place.

It would thus appear, and this is from our point of view the most important thing to emphasize, that the action by which entrepreneurs secure a profit is, in the first instance, *a pressure action (action de*

puissance).[2] This explains the difficulties which the orthodox economists encounter in accounting for profit—the fact that they never discover more than a small part of the true theory, since indeed the very idea of positive action—of an action exerted on the market structure itself—is strange to them and since only a few of them have ever had, even briefly, any intuition of such a possibility.

We must now explain things as they appear in their new aspect of this dual action of entrepreneurial power—power exerted in relationships with consumers, on the one hand, and with factor-owners and in a general way with all those who exert some influence on costs, on the other hand. This will be the object of the remaining two parts of this paper. In conclusion, we shall describe the general character of profit and in the light of what we have learned shall criticize the theories actually prevalent.

I.—*Pressure Action Toward Consumers*

If competition fully prevailed, that is, if there were an infinite number of individuals capable of becoming entrepreneurs, if these individuals were exactly like each other, if they could procure all the factors necessary for their operations without encountering any obstacle resulting from the total or partial indivisibility of those factors, then selling prices would be automatically established at levels such that the entrepreneurs would have to pay out the entire amount to the factors of production without keeping anything for themselves. There would be no profit. For profit to arise there must be obstacles to the free play of competition. This shows that there is a profound affinity between profit and monopoly: the pursuit of profit leads to monopoly and only monopoly permits garnering a regular and lasting profit.[3]

Monopoly elements, however, may be important or may be quite weak. They may be an integral part of a state of affairs which is no longer perhaps perfect competition for the theorist preoccupied with scientific exactness but which is still undeniably competition for the practical man, the sort of competition which we can find in the real world. These monopoly elements may, on the other hand, encompass the entire market for the product we are considering.

A. *In competition in the practical sense,* a regime characterized simply by the existence of a large number of sellers who are not asso-

[2] *Cf.* F. Perroux, "Esquisse d'une théorie de l'économie dominante," *Archiv. de l'Inst. de Sci. Econ. Appliquée* (Apr.-Sept., 1948), p. 243.

[3] In the situation described in the text, only those profits or losses resulting from a change in the external situation would be realized. They would exist only for the time necessary for production to be adapted to consumption. Their duration would therefore depend on the obstacles to competition.

ciated and who are individually small relative to the total market, two elements necessarily intervene and bring about the appearance of profit.

These elements are, on the one hand, *the objective scarcity of entrepreneurs,* resulting from the fact that to perform this function it is necessary to combine conditions of aptitude, knowledge and possession of monetary capital which are possible only for a sometimes very restricted minority; on the other hand, the *subjective requirements* of the individuals who fill these conditions. That is, people will assume the rôle of entrepreneur and remain in it only if they secure a minimum income which they consider suitable, or, more exactly, which the least exacting among them consider indispensable, given the importance of the knowledge required, the risks run, the labor furnished, the capital engaged, the sort of life the entrepreneur himself must lead.

If only these elements were present, profits would often be very limited and much lower than those which we observe in the real world. But besides these elements we find others, dynamic and volitional by nature, resulting from the action of the entrepreneurs themselves and from the development of the economy.

1. First is the *use of advertising by certain entrepreneurs.* By this means entrepreneurs can exert power over consumers' choices. They can, by modifying consumers' preferences, by moulding those preferences to their own interests, lead consumers to prefer their products to competing products, and indeed to attach their loyalties to particular firms. They may in this way *prevent consumers in some degree from profiting by competition, or at the very least, limit the extent of such competition.*

We learn from research in the theory of monopolistic competition that in so far as advertising is not general, those who do avail themselves of it acquire very great profits. On the other hand, in so far as advertising does become general throughout a branch of production those profits cannot be maintained except in so far as the advertising succeeds in diverting toward this branch the purchasing power which would normally be directed toward others—certain individuals preferring, for example, to go to the movies rather than buy books, or to buy an automobile rather than have children and buy the things necessary to bring them up. The extent of this possibility, however, is limited. If advertising becomes general throughout a branch of production, then profits tend to disappear. Costs, inflated by advertising expenses, approach selling prices. An important influence is therefore exerted tending to eliminate the weakest enterprises, build up the others, and thence to bring about a state of oligopoly or of monopoly and thus permit the restoration of profit. Thus, we note in passing,

advertising starts one of the mechanisms of development of the system by which, as the system operates, its structure is progressively transformed.[4]

2. The second element is *the discovery by one of the competitors of a new product or of a better technical process for manufacturing an old product.* In so far as the process is not generally used, either as the result of taking out a patent or by the simple force of circumstances, the imaginative entrepreneur realizes a profit resulting from the fact that he is the only one to use the new process.

Schumpeter[5] has insisted at length on this point, showing that the essential thing, if we wish to understand the capitalist system, is not knowing how it administers existing structures, but how it creates new ones and destroys old ones. From this point of view, according to him, true competition is not that which takes place among existing enterprises and which the classical theorists have analyzed so exhaustively. It is that which constantly puts in opposition to old products and to established enterprises new products, revolutionary techniques, previously undiscovered raw materials, original forms of enterprise. There, Schumpeter tells us, we find the real competition, that which attacks not the profit margins but the very foundation and reason for being of existing enterprises. There we find the competition which is the true generator of progress. However, this competition, strange as it may seem, is possible only under the protection of monopoly. New enterprises must have the ability to establish monopolies permitting them to realize great profits to compensate them for the enormous risks which they run. These profits, however, are temporary and will be destroyed by the ultimate appearance of new processes or new products.

From this point of view, then, it seems that the desire for profit makes necessary continual alterations in the structure of economic organization, while the acquisition of those profits is possible only through the systematic search for those alterations.

3. A third element consists in *the increase in monetary demand.*

In many cases this increase will be due to causes quite apart from the action of entrepreneurs. It will nevertheless be advantageous to them. We know that, in general, production cannot follow an increase in demand without some delay. From this it follows that the enterprises which are on the spot and the owners of existing stocks will enjoy a

[4] On the effect of advertising and the theory of monopolistic competition, see E. Chamberlin, *The Theory of Monopolistic Competition* (Cambridge, Harvard Univ. Press, 1933), and on the conclusions which one can draw from that theory, see our *Cours d'Economie Politique* (Paris, 1950), Pt. I, pp. 621-29.

[5] J. Schumpeter, *Capitalism, Socialism and Democracy* (New York and London, 1942), and *Théorie de l'Evolution Economique* (Paris, 1935).

provisional or temporary monopoly permitting them to secure considerable profits. In addition to this, if, as happens in periods of inflation or war, the insufficiency of supply lasts long enough, the entrepreneurs will become accustomed to profit rates higher than those with which they were formerly contented and, when the situation returns to normality, they will insist upon these new rates, almost unconsciously stopping the expansion of production before prices and profits return to their original level. According to this hypothesis profit turns out to be a rent or conjunctural gain which an alteration of the psychological attitudes of the producers, an alteration ignored in the classics, may prolong for a greater duration than could have at first been foreseen.

However, positive action on the part of entrepreneurs will also occur when, now aware of this phenomenon, they try to exert pressure on the public authorities, either to inject purchasing power into the economy via the budget or credit policy in periods of crisis and depression, or, at any time and in any case, to refrain from deflationary policies. Thus it appears that entrepreneurs, even when they are not acting collectively at the economic level, may, by virtue of their numbers and through the medium of political action, attempt more or less consciously to induce general price movements which will permit them to maintain their profits at high levels. Contrary to one's first impression, then, the rise in profit following upon an important variation in aggregate monetary demand cannot always be analyzed as a simple rent or conjunctural gain. Such rises are, more often than many people believe, the result of positive action.

To summarize, it appears that even in a competitive regime, using this term in the practical sense, profit does not owe its existence, except for a small part, to the two elements of static monopoly, *viz.*, objective scarcity of entrepreneurs and their subjective requirements. The essential thing is found in the positive action exercised by producers individually or collectively in their relations with consumers. This action may take place through the medium of advertising, through discoveries, or through the more or less induced intervention of the public authority.

B. When for a situation of more or less restricted competition we substitute a *situation of true monopoly* the profits of enterprise are naturally augmented. This, in fact, produces important changes both from the static and from the dynamic point of view.

1. *From the static point of view,* we note first that the number of entrepreneurs is no longer limited by the objective circumstances, by the number of people who may have the requirements. Rather, it is limited by the willingness of those in the industry or profession to admit others to it. They may exercise this control by simply acting within

the framework of existing laws; *e.g.*, notaries and lawyers may buy up at their common expense a practice at the death of its incumbent in order to reduce the number of their competitors. Or entrepreneurs may persuade the public authorities to limit access to their industry or profession by direct restrictive measures or by increasing the formal requirements of competence. Or the entrepreneurs themselves may proceed by boycott, price-cutting or any other means to the elimination of those audacious individuals who have presumed to enter their preserves.

Besides this, from the day when collusion takes the place of competition, the decisions which are made or which must be made, are no longer a function of the state of mind and circumstances of the marginal entrepreneurs but rather of the whole group of entrepreneurs, discussing their decisions and acting upon them as a unit. They have a choice between two policies: either to establish a price such that the least favorably situated entrepreneur can acquire a sufficient profit—to conserve, in other words, the principle of the margin—or to establish a pooling arrangement among the associates so as to indemnify the least favored, substituting, consequently, the principle of the average for that of the margin.

To be as realistic as possible, we must add that the state of mind of the entrepreneurs is not generally translated directly into effective decisions. Men must *interpret* it. The directors of the alliance, according to their temperament, orientation and concern for the general interest may weaken or re-enforce the positions of the members of the group.

2. *From the dynamic point of view* we must add that the substitution of groups for individuals facilitates in a general way the positive action of entrepreneurs and changes somewhat the character of that action.

In the matter of advertising, the new situation means that the different enterprises within an industry no longer compete, but that industries compete with each other. We are no longer interested, for instance, in persuading buyers to prefer a Citroen to a Renault automobile, but rather in persuading them to give up going to the theater or the moving pictures or buying paintings in order to buy an automobile.

In the matter of adopting new products or new processes we rediscover a thesis of Schumpeter's.[6] According to this thesis, which is somewhat different from the one pointed out earlier, trusts and cartels are in a better position to support research laboratories, to realize technological progress and to lower their cost curves generally. This means that from the point of view of selling prices they pass from the

[6] J. Schumpeter, *Capitalism, Socialism and Democracy* (New York and London, 1942).

always delicate position of trying to raise prices to the much more advantageous one of simply holding them constant. For to maintain or to raise profits under these conditions it is sufficient on the consumption side to maintain prices. It is no longer necessary to stimulate a rise in them.

Finally, in the matter of influencing the public authorities, it is evident that groups are in a better position than isolated entrepreneurs to obtain favorable monetary measures, to secure programs of public works or to stimulate large governmental purchases of supplies.

In this type of entrepreneurial action, however, we must emphasize that groups are far from being always unanimous, and that, to the contrary, serious differences in points of view may appear among them. Export industries are generally favorable to monetary devaluation, a policy highly adverse to import industries. In France we have seen the sugar beet planters join forces with the producers of industrial alcohol and the wine distillers to force the public authority to purchase great quantities of alcohol, suggesting to them that they dispose of this alcohol by requiring that it be mixed with motor fuel. But the automobile manufacturers, who do not want their customers to have to spend too much on motor fuel, and the trucking companies, for whom the price of motor fuel is a cost, are violently opposed to this idea. Despite all this, however, these business groups generally avoid giving too much publicity to these internal rifts or pushing their differences too far, for they have too many other common interests, notably in regard to the prices of the factors of production.

Every action exerted on selling price, in fact, remains without significance if it is not accompanied by a parallel action tending to prevent the cost of production from varying in the same direction, indeed, to make it vary eventually in the opposite direction.

II.—*Pressure Action toward Factors of Production and Costs*

In their efforts to reduce costs of production entrepreneurs, individually or collectively, come into contact with laborers, with those who provide capital, and with the public authorities. In this whole area they exercise new and very important types of positive action.

1. *Toward laborers* entrepreneurs adopt a complex attitude. As a general rule they try, by using continually more advanced techniques, to replace men by machines. The advantage of this operation, whenever the machines are not too expensive, lies in the direct reduction of costs. But at the same time they diminish the demand for manual labor in relation to its supply and hence better their position in bargaining over the wage rate.

In the absence of associations of either employers or laborers, the wage rate is established at the intersection of the supply and demand curves for labor. But modern theories have shown that as a consequence of the abnormal form of the supply curve of labor, which is frequently S-shaped, several points of intersection may be encountered. Entrepreneurs try, consequently, to maintain the wage rate at that level which is most advantageous for them. Throughout the 19th century, for example, we note that they were first opposed to any legal limits to the hours of labor, and subsequently to any reduction of those hours. Indeed, they opposed the prohibition of the employment in factories of children below a certain age. Moreover, by measures such as the famous worker's pass-book (*livret ouvrier*) they can, with the consent of the public authorities, restrict the movement of workers from one center to another so as to modify the supply curve of manual labor and displace it in a direction favorable to themselves. In so far, then, as they succeed in establishing either a monopsony of demand on the labor market or a monopoly of supply on the product market, they can, as Mrs. Robinson has shown,[7] separate the wage rate from the value of the marginal product of labor, *i.e.*, exploit, as it were, their workers.

When there are unions, the struggle becomes more violent. Everything then depends on the course of negotiations between the employees' representatives and the employers. J. R. Hicks[8] has shown that it is possible to construct curves of employer concessions and labor union resistance, these curves representing the functional relation between the wage rate considered and the length of the strike necessary to secure it as seen respectively by employers and employees. These two curves permit us to determine the maximum wage rates which successful negotiation permits the labor unions to extract from the entrepreneurs. But what must be understood from our point of view[9] is that the shape and position of these two curves depend on sociological and institutional factors: on the employees' side, the extent of unionism, the unity or disunity of the workers' organizations, the financial power of the unions, the strictly professional or political-professional character of the unions; on the entrepreneurs' side, the importance of fixed capital, the nature of past contracts with buyers, the degree of collusion with other entrepreneurs, the intensity of foreign competition, in a word, their

[7] J. Robinson, *The Economics of Imperfect Competition* (London, 1936), Book IX, Chaps. 25 and 26.

[8] J. R. Hicks, *The Theory of Wages* (London, 1933).

[9] See our article on "Les facteurs qui déterminent le taux du salaire dans le monde moderne; du prix du travail au revenu du travailleur," *Revue Economique* (July, 1950), p. 129.

entire conjunctural situation. What we must especially insist upon is that entrepreneurs and laborers try to act not only each one upon his own curve—which action may, for example, simply express the discipline exercised by each group over its members—but also *upon the opponent's curve*. Labor unions try to prevent employers from hiring any workers except those from the locality and members of the unions (the "closed shop" clause), they affix a mark called the "label" on products manufactured by good employers, that is by employers paying adequate wages, they oppose the immigration of foreign workers. For their part, employers' associations may organize and favor the immigration of skilled or manual laborers, bring pressure on local newspapers not to publish offers of employment outside the locality, divide their personnel so as to oppose certain groups to others, for example men against women, white against colored, and try to impose membership in company unions, etc.

It is thus obvious to anyone who tries to get past the surface appearance of things that wage rates depend in large measure on positive action which employers' and laborers' organizations exercise or try to exercise, whether directly on each other or through the medium of public opinion or public authority. In the modern world, profit has taken on a collective character; it tends to become, at least in a certain measure, a *class income*. It obviously does an entrepreneur no good to better his methods of production if an increase in wage rates, accepted or suffered by his association, raises in greater proportion his costs of production. Efforts on the level of plant management appear insignificant beside efforts on the level of collective action. A number of entrepreneurs have become aware of this fact and this tends neither to stimulate their activity along the line of internal organization of their factories nor to diminish the intensity of social conflicts.

2. *Toward those who provide capital* entrepreneurs may likewise act in various ways, almost all of which again involve positive or direct action.

To reduce the rate of interest they may reduce as far as possible their demand for money, or indeed exercise pressure on the monetary authorities to adopt a policy of liberal credit and cheap money. To diminish the cost of repaying previous loans they may favor monetary devaluation and, in a general way, favor any measures which will stimulate rises in prices, while they will try to prevent any large-scale action tending to lower them.

Moreover, conflicts may arise between shareholders and management. For a long time we assumed that their interests were identical, the management being mere agents of the shareholders, both groups

eager for profit. But realistic analysis shows that all too often managers act as though they were the sole claimants to profit, the shareholders tending to be transformed to pure capitalists, capitalists who receive not a fixed rate of interest but a remuneration varying *in a certain degree* with the results of the enterprise. If this view is accepted, we must conclude that the managers, the real directors of the concern, may increase their profits by diverting to their advantage those gains which would normally go to the shareholders, whether by allocating to themselves exorbitant salaries or by pursuing policies of internal financing having no aim except that of procuring for the directors of the mother-company new and well-remunerated administrative posts.

The struggle between entrepreneurs and capitalists always seems to be less violent than that between entrepreneurs and laborers. This is because a profound solidarity exists between them, they belong to closely related social classes, and the support of the capitalists is indispensable to the entrepreneurs when they appear before the public authorities to plead for various measures. This fact explains why the attacks are less violent, why the proceedings employed are generally subtle. None the less, the antagonism exists, partial if not total.

3. *Toward the public authorities,* finally, there is exerted very strong pressure aiming at the reduction of those fiscal charges which are a part of the costs of production. The measures taken are very diverse. There is fraud, pure and simple. There is the attempt to secure legal exemptions by influencing the legislature, an attempt pursued to abusive lengths, we must admit, in France, where fiscal laws wind up entirely crippled by provisions designed rightly or wrongly to secure special privileges for certain groups. Finally, there are campaigns against particular duties, financial support of political parties, etc.

Without doubt, all this activity regarding wages, interest and taxes would not, in itself, be any guaranty of high profits. For these to occur, selling prices must not decrease along with wages, interest and taxes. But it is obvious that any action tending to reduce the latter, or, at least, to prevent them from rising, facilitates the quest for profit, for it is always easier to keep selling prices from falling than it is to raise them.

We shall now conclude our exposition by emphasizing certain previously unknown or neglected features which seem to be characteristic of profit.

a. Profit is described here as the *income of those who struggle for it.* Profit is not the income of those peaceful folk who bring something to the market for sale and wait quietly for what they may receive in exchange. Profit is the income of *those who fight and who love the*

battle. It is not the remuneration for the sale of something but the reward of victory.

b. Profit is the result of action performed not in a static world within the limits of a given social mechanism but on the *circumstances themselves,* and on the *underlying structure.* To be sure, in every country, entrepreneurs generally appear in politics as the vehement partisans of the conservative parties. They conceive themselves—quite honestly—as wishing to conserve the established state of affairs, sometimes even to restore a former state. But they have themselves been the most potent force in destroying that former state.[10] As for the present state of affairs, it is quite impossible for them to leave this unchanged without drying up the source of their profits. To be sure, entrepreneurs of today have a tendency, to use Sombart's phrase, to grow fat and sluggish. They are being transformed from conquerors to administrators. But these administrators are always, in their own way, active agents in the transformation of society, dangerous revolutionaries we might say if we were not afraid of scandalizing them! Their purpose is not the same as that of the labor unions. They are less conscious of their purposes than the unions. But, whether they take any account of it themselves or not, by their constant search for increased profits they create a flow of new products, techniques and forms of organization. By their efforts, static competition tends to retreat before oligopoly and monopoly, while the public authority, particularly in times of crisis, constantly increases its area of intervention. Indeed, they try to dominate the public authority itself by carrying out their activity within the very core of the administrative organs of the state, legally or illegally. Wherever one turns it appears that the *quest for profit has been, since the beginning of the 19th century, one of the sources of transformation of the capitalist regime, that profit is the result, in large measure, of positive action exerted on the whole economic environment.*

In this way we may explain why the theory of profit has for a long time represented one of the weakest points of the classical doctrine. That doctrine did furnish an explanation of wages, interest and rent. The explanation, from our point of view, remained superficial because of its refusal to integrate social and institutional factors, because of its willingness to reason within the limits of an environment considered as immutably *given.* The classics none the less gave the illusion of accounting for those incomes. And, in so far as one was willing not to go to the root of things, they accounted for these incomes quite effectively.

[10] See my article on "Problematique de la libre concurrence" in *Wirtschaft und Recht* (1949), p. 73.

In dealing with profit, on the other hand, they were helpless. In a world where the environment remained unchanged, and where competition was, in every sector, absolutely perfect, there would be no place for any regular and lasting profit. The classical economists, at least their more modern representatives, understood this. The explanations they have proposed consist therefore in showing that in fact competition cannot be perfect. The factors of production, claim those who hold the modern theory of surplus,[11] are never perfectly divisible, industrial equipment particularly cannot be varied except by discontinuous amounts. Delays in increasing this equipment are inevitable. From this fact arise those rents which, taken collectively, we call profit. Not everyone can set himself up as the head of an enterprise, as Knight[12] points out in his theory of uncertainty and Landry[13] in his theory of the relative scarcity of entrepreneurs. One needs certain personal qualities, a taste for risk, the financial ability to make the necessary guaranties. The number of entrepreneurs is necessarily limited. Competition among them is restricted. They are able to obtain an income.

But once we have taken this route, we are led either to maintain that entrepreneurs are passive individuals, gathering in those rents which result from the imperfections of competition—an astonishing position to take in a regime which is founded, so to speak, upon the entrepreneur and profit—or we are led to think that entrepreneurs act upon the economic environment in such a way as to try to aggravate the imperfections of competition in order to bring about the existence of those gains which they are supposed to be seeking. This is indeed what Schumpeter suggests in an analysis that is from our point of view too limited. But Schumpeter is not really a classicist since indeed he accepts as a proper subject for discussion the basic premises or data of the economic system. We are for our own part persuaded that the

[11] See M. Amonn, *Grundzüge des Theoretischen National Ökonomie* (Bern, 1948), pp. 132 ff.; Barnett, "The Entrepreneur and the Supply of Capital," in *Essays in Honor of J. B. Clark* (New York, 1927); Fellner, *Monetary Policy and Full Employment* (Berkeley, 1946), pp. 52 ff.; Foster and Catchings, *Profits* (Boston, 1925), pp. 98-169; Gordon, "Enterprise, Profits and the Modern Corporation," *Readings in the Theory of Income Distribution* (Philadelphia, 1946), p. 558; Hahn, "A Note on Profit and Uncertainty," *Economica* (Aug. 1947); Haley, "Value and Distribution," in Ellis, *A Survey of Contemporary Economics* (Philadelphia, 1948); Hawley, *Enterprise and the Productive Process* (New York, 1907); Hart, "Risk, Uncertainty and the Unprofitability of Compounding Probabilities," *Readings in the Theory of Income Distribution*, p. 547; Tintner, "A Note on Economic Aspects of the Theory of Errors in Time Series," *Quarterly Journal of Economics*, 1939.

[12] Knight, article "Risk," *Encyclopedia of Social Sciences; Risk, Uncertainty and Profit* (Boston, 1921), pp. 31-46; "Profit," *Readings in the Theory of Income Distribution*, p. 533.

[13] A. Landry, *Manuel d'Economique* (Paris, 1908); "Sur la théorie du profit," *Revue d'Economie Politique*, 1938, p. 1473.

science of economics which the present generation should construct must be a *science without premises,* a science which considers, in the long run, the environment itself as a variable, depending at least partially on the action of economic factors and modified progressively by the functioning of the system. But if that is the case, the theory of profit will necessarily occupy, at least so long as we are in the capitalist phase, a place of the first importance in the new body of theory.

Author's Note on Editorial Comments

We often say that Science knows no Fatherland. By this we mean that scientific laws are valid for every country and that it does not matter what may be the nationality of those who discover them, provided only that they are seeking for the truth.

In the field of economics we confront two obstacles to international scientific discussion. First, the structure of the economy varies from one country to another—*e.g.,* in the degree of concentration of industry, in methods of government, in the reactions of producers and consumers, etc. Consequently, what appears natural to the students of one country may seem strange and novel to those of another country. A factor which plays a decisive rôle in one continent may be quite secondary in another. Secondly, despite ever closer international relations, climates of opinion continue to be different. A method of reasoning which seems normal to some may astonish others. But we must never lose sight of the fact that combining these different methods is an essential factor in progress. Economists, for instance, may well differ on the degree of state intervention which is desirable. But we are all in agreement in thinking that the advancement of our science presupposes the maximum degree of freedom and competition in research and in the exposition of our results.

The American Economic Review informed me that they found my essay interesting and that they would be glad to publish it, but that since I was addressing American readers conditioned by a particular literature and living in a particular environment it would be desirable for me to make certain points with more emphasis than I might if I were addressing my usual European readers. In this connection I have received two notes by editorial readers, which I shall call Note A and Note B. They have been very valuable to me. First, they have enabled me to correct certain errors, but even more, they have led me to understand on what points I risked surprising my American readers.

I have decided, therefore, to summarize them. In Note A I read, "Marchal's aim, as I understand it, is to explain *the income category that would be reckoned as profit by a business man or an accountant,* not the ideal category that economic theorists talk about which separates monopoly rents and wages of management from pure profit. . . ."

This is correct. To be entirely clear, however, I wish to point out that, in my opinion, as Alfred Marshall has emphasized, we theorists should always attach the greatest importance to the conceptions elaborated by businessmen

and accountants. They are the real agents of the economy and they must act upon those conceptions. When we study profit *what we should explain is the income category which businessmen call by that term.* For this purpose we have the right to construct ideal categories, but upon the condition that they lead finally to a complete explanation of the real category, which is alone important.

Now it seems to me that the traditional attitude, which consists of distinguishing in the profits of businessmen a managerial salary, a monopoly rent, etc., while entirely legitimate, is insufficient. It explains *only a part of businessmen's profits* and, in my opinion, *not the most important part.* It points out the factors which act on certain elements of businessmen's profits but leaves unexplored very important factors which act on other elements or on the total situation. In short, the traditional explanation seems to me to be centered on the secondary rather than the primary issues. Why? In my opinion—and I shall try to demonstrate this—because it does not take sufficient account of the structural transformations which are produced, whether slowly or rapidly, in the *entire* economy; because it assumes a static and not a dynamic world, a world where the degree of competition does not change, a world without that intervention of the public authority which is so prevalent in the real world.

In view of these conditions I have formed opinions which the author of Note A has described very adequately. I prefer to leave the last word to him: "Marchal dismisses as unsatisfactory theories that depend on scarcity of entrepreneurial ability since such gains are limited to returns from exploiting a given situation. He also considers Knight's uncertainty theory inadequate because he thinks superior ability or luck in guessing the turn of the market represents a very limited description of the qualities and activities that produce profit. Presumably his conception leaves room for both the factors mentioned above. Marchal, however, puts heaviest stress on those activities of businessmen designed to alter the existing state of markets. This includes, of course, innovating activity of the kind on which Schumpeter based his theory, but it goes beyond it. Marchal would emphasize the efforts of individual firms and groups to alter the political framework to their own advantage in such spheres as taxes, tariffs, subsidies, government contracts, regulatory arrangements, money, prices and inflation, and labor relations."

I am equally in accord with the author of Note B when he says that M. Marchal's article "has little if anything to do with the theory of profit as it is generally understood. His strictures against the existing theory come down to saying that profit theorists would have been better off if they had studied something else."

If I may add one more word, I should say that economic theory has up to the present taken very full account of individual factors, but that it must go further—this is the course which I am taking in my own work—that it must introduce beyond this, into the body of the theory itself, factors of a sociological nature, especially all those activities which are carried out through the care of or by the agency of the State, or which have as their purpose the modification of the whole market structure. (See in this sense

my article on "La Crise Contemporaine de la Science Economique," *Banque* [Jan., 1951], p. 1.)

All these factors certainly operate very strongly in Europe. Do they exercise as powerful an action in the United States? I cannot say. The American readers of this essay can answer this better than I. To be quite frank, I should be most surprised if these factors were completely absent there. It therefore seems to me useful to study them. I leave open two questions: "In what measure are they present in the United States at the present time? Is their importance tending to increase or to diminish?"

The two notes which have been communicated to me seem to admit that, while they are less prevalent than in Europe, they are nevertheless and without any doubt active in the United States.

"In this emphasis, Marchal seems to me to reflect the expanded role of government *everywhere* and possibly to express the difference between the significance of government on the Continent and its importance in the U.S. and U.K. that goes back several generations" (Note A).

"On one hand, Marchal is describing in interesting fashion a type of behaviour by entrepreneurs that is widespread and important. This behaviour is particularly important on the European continent. Indeed, I am enormously more sympathetic toward Marchal's piece than I would have been before my stay in Europe. The difference between Europe and the United States that most impressed me was precisely this difference in the structural organization of the economy. Restrictions upon entry, concerted cartel practices, use of the government to maintain vested positions, and the like, are the rule there and as a result the economy is highly rigid and extremely inefficient. By contrast, we have the purest of pure competition. Marchal gives implicitly a summary of the kinds of practices followed that is reasonably exhaustive and of considerable interest" (Note B).

ON MAXIMIZING PROFITS: A DISTINCTION BETWEEN CHAMBERLIN AND ROBINSON*

By STEPHEN ENKE†

I.—*Introduction*

The recent debate on "marginalism," which it is not intended to resurrect, appears to have overlooked an important distinction between the theories of Professor Chamberlin and Mrs. Joan Robinson. In many respects the ideas—and as Triffin has pointed out, the language also[1]—of these two authors are often very similar. However, it is a mistake to assume that they are analyzing the same subject.[2] In many respects Chamberlin is extending the Marshallian tradition, but with a revolutionary addition; he is studying competition with product differentiation.[3] Logically, as Triffin has pointed out,[4] the advent of product differentiation destroys the concept of industries and groups, and so Chamberlin has really taken a first step towards explaining the competitive adjustments of different product-making firms within the economy. Mrs. Robinson, despite the misleading title of her celebrated book,[5] is concerned only incidentally with competitive adjustments; excepting Chapter 7, she is almost exclusively bent upon analyzing an isolated monopoly or contrasting it with competition. This distinction is important because it affects the ability of each theory to make predictions regarding the typical adjustments of sets of firms.

One of the main potential uses of value theory to the economist is as a predictive aid. This is particularly so, when as is so often the case,

* Many of the ideas in this paper have been inspired by the thoughts and work of Professor A. A. Alchian. (*Cf.* "Uncertainty, Evolution, and Economic Behavior," *Jour. Pol. Econ.*, Vol. LVIII, No. 3 [June, 1950], p. 211 *et seq.*)

† The author is lecturer in the School of Business Administration, University of California, Los Angeles and is associated with the RAND Corporation.

[1] Dr. Robert Triffin, *Monopolistic Competition and General Equilibrium Theory* (Harvard University Press, 1940), pp. 38-46.

[2] This has, of course, been frequently pointed out by Professor Chamberlin. It is interesting to note this is also the opinion of Professor George J. Stigler. (See his "Monopolistic Competition in Retrospect" in *Five Lectures on Economic Problems*, London School of Economics and Political Science (Macmillan Co., New York, 1950), Lecture 2.

[3] *The Theory of Monopolistic Competition* (Harvard University Press, 1935).

[4] *Op. cit.*, pp. 81-85.

[5] *The Economics of Imperfect Competition* (Macmillan, London, 1933).

the economist is concerned with public policy. He wants to employ value theory to predict the average effect of this or that autonomous event—and especially of actual or proposed government actions—upon the prices, outputs, employment, etc., of some industrial or regional class of firms. Professor Chamberlin's theory of monopolistic competition—or competition with product differentiation—is in many respects a long-run theory and can make aggregate predictions without resorting explicitly to the assumption that each firm knows how to maximize profits. Mrs. Robinson's analysis of isolated monoply can be used to make predictions regarding aggregate behavior only in so far as it can be relied upon to predict individual behavior; and this in turn requires the assumption that each firm knows in advance how to maximize profits, and succeeds in doing so.

It is the contention of this paper that it is quite unreasonable to suppose that each firm acts to maximize profits. The explanation of this unreasonableness is not simple ignorance of the logic of profit-maximizing theories or the practical impossibility of knowing all the relevant functions of the moment and relating them to one another. It is also that, in the face of future uncertainty, the profit-maximizing motive does not provide the entrepreneur with a single and unequivocal criterion for selecting one policy from among the alternatives open to him. The desire to maximize profits does not constitute a clear and unique behavior prescription; consequently, the economist cannot make individual-firm predictions in the short run. In the long run, however, if firms are in active competition with one another rather than constituting a number of isolated monopolies, natural selection will tend to permit the survival of only those firms that either through good luck or great skill have managed, almost or completely, to optimize their position and earn the normal profits necessary for survival. In these instances the economist can make aggregate predictions *as if* each and every firm knew how to secure maximum long-run profits. This "as if" assumption is far more reasonable in the case of Professor Chamberlin's theory than in that of Mrs. Robinson.

II.—*On Predicting Individual Firm Behavior in the Short Run*

The necessity for assuming that firms know how to maximize profits *ex ante*,[6] in order to use isolated monopoly analysis for predicting individual firm behavior, has been stated by Mrs. Robinson herself. She asserts that (*op. cit.*, p. 6):

> . . . The use of marginal curves for the analysis of monopoly output contains within itself the heart of the whole matter. The single assumption

[6] *I.e.*, know how to act in advance of coming events so as to secure maximum profits.

> which it is necessary to make in order to set that piece of apparatus . . . at work is the assumption that the individual firm will always arrange its affairs in such a way as to make the largest profits that can be made in the particular situation in which it finds itself. Now it is this assumption that makes the analysis of value possible. If individuals act in an erratic way only statistical methods will serve to discover the laws of economics. . . .

The purpose of this section is to demonstrate that it is impossible for each isolated firm to maximize its profits. Hence, even if the economist knows all the relevant revenue and cost functions, he can not predict how each firm will act or react to old or new circumstances. Mrs. Robinson's "single assumption," although often made by others, is extravagantly unrealistic; all that depends upon it is therefore useless for prediction, unless there are reasons for supposing that the theory yields reliable predictions for other reasons.[7]

The fundamental difficulty is that a desire to maximize profits does not provide the entrepreneur with an action prescription. He does not know how he should act just because he knows he wishes to secure maximum profits. When the future outcomes of present decisions are uncertain, motivation does not constitute a criterion for each entrepreneur.[8]

An extreme gambling example may help to clarify the distinction between motivation and criterion. One gambler might be given a hundred dollars and told to make a single bet at a roulette table and "maximize profits"; another player might similarly be given one hundred dollars, but be told to "maximize losses." If they are obedient, both gamblers will play a number rather than a color because, if they are ever to secure the maximum profits and maximum losses that they respectively seek, the longest odds provide profits or losses at the highest rate; if they both played a color, they would be acting in a manner inconsistent with their instructions. Actually, both gamblers might play the same number without disobeying their instructions. Of course, if the gamblers had previously determined that 17 won more often than any other number, and 21 less often than any other number, then the profits-maximizing gambler should play 17 and the loss-maximizing gambler should play 21.[9]

[7] See Section III on the possibilities of leaning on the "as if" justification.

[8] For the purposes of this article, and in order to avoid unnecessary controversy, let us stipulate that the goal of entrepreneurs is maximum profits in the above sense, and not social esteem, personal power, or a quiet life. If a firm has the choice of A or B actions, and it "knows" A will *always* occasion more profits than B, it will be assumed to elect the former policy. Let us also assume that entrepreneurs possess electronic computers and are therefore capable of going through all calculations of the kind described in textbooks.

[9] This statement implies that the past frequency distribution can hardly be attributed to chance and that there are no reasons to suppose that the roulette table has recently been adjusted.

Unless people have beliefs concerning the likelihood of certain future events occurring, a specific motivation cannot provide them with a criterion for selecting one alternative over another. The economist cannot predict how an individual entrepreneur will act if the economist does not know the entrepreneur's assessments of future probabilities. This difficulty is only partly mitigated when all entrepreneurs and all economists have perfect knowledge of the frequencies with which different events have occurred in the past; after all, in our changing economies, almost everyone senses that the past is an unreliable and uncertain guide to the future.

Even if an economist does know an entrepreneur's view of the future, the economist can not normally predict the entrepreneur's decisions, because rational behavior is ambiguous when the entrepreneur is uncertain regarding the future. In reality each possible decision does of course have a unique outcome—but very few entrepreneurs probably assume a single possible outcome for each policy. If an entrepreneur is of a contemplative nature, he may assign various probabilities to different profit outcomes for each alternative policy. If he does not do this, no external observer can hope to predict the actions of a particular entrepreneur. However, even if he does do this, there are grave difficulties.

Let us suppose that each entrepreneur goes through the following mental processes. For *each* possible action he constructs a frequency distribution giving his view of the probability of each possible magnitude of profit or loss. It does not follow that the desire to maximize profits provides him with an unequivocal criterion for rejecting all policies save one that is preferred.

Our entrepreneur may decide he has the following two alternatives: (a) with an expected mean profit of $25,000 and (b) with an expected mean profit of $30,000. Does it follow that he should or would select (b)? The two frequency distributions that yield these average profit values will almost certainly have a different dispersion and this difference can be significant. Suppose the estimated profits range in the case of (a) from $50,000 to minus $25,000 and in the case of (b) from $90,000 to minus $90,000. Might he not, depending upon his individual temperament and personal circumstances, select (a) in preference to (b), despite a lower expected mean value?[10]

It is not a valid objection to point out that *repeated* investment in (b) is a preferable policy to *repeated* investment in (a). The law of

[10] Particularly, an investor of modest means might prefer A because a loss of $10,000 would deprive him of sumptuary satisfactions having a great utility to him, whereas a rich man might experience little change in life following from such a loss; it is often said that rich men and wealthy corporations can alone "afford," in some subjective sense, to furnish "venture" capital. (*Cf.* my *Intermediate Economic Theory* (Prentice-Hall, 1950), Chap. 24.)

averages in this instance does not have the same relevancy for entrepreneurs as it may possess for roulette players. A gambler can often continue to play the same game at the same odds and stakes until he has at least caught up with the "expected" or mean result. But an entrepreneur does not have an opportunity to risk the same investment in the same way at the same odds over and over again. Many investment situations are unique and the passage of time may sweep them away. For these reasons an entrepreneur often cannot say which of several overlapping possible profit distributions is the "best"; he cannot sensibly consider only their means while disregarding their dispersions.[11]

Economists who believe in the meaningfulness of "maximizing profits," as an action prescription, may counter by suggesting that each entrepreneur assigns a utility weight for each several $100 of incremental profit and loss, and makes the maximization of expected utility his aim and test. The more sophisticated may argue that, inasmuch as utility and profits are monotonically related and we are only interested in the *directions* in which entrepreneurs react to autonomous events, this substitution of utility maximization for profits maximization does not seriously affect the ability of value theory to predict the behavior of individual firms. This is of course a *possible* theory.[12]

However, it is not a very convincing theory because there are so many other possible theories, based on alternative suppositions regarding entrepreneurial criteria, that one could support as eloquently. One might assert that entrepreneurs always select that policy which has a subjective profit distribution containing a larger profit area than any other. Or one might attribute a min-max philosophy to entrepreneurs, and assert that they will always select that policy that has the smallest possible loss. Mean utility is only one of several possible criteria.

Moreover, the idea that entrepreneurs seek to maximize expected utility is not a very *useful* theory for predicting the actions of individual firms. An external observer can hardly know the subjective probability distributions in the mind of management or the utility of money to the entrepreneurs involved in decision making. *A fortiori*, if there is no rational way in which a firm can determine the single best policy to follow, an economist cannot predict the actions of a single firm.

Where does this leave Mrs. Robinson? The idea that value theory can proceed in terms of utility rather than profits provides her no

[11] *Cf.* the discussion of Monte Carlo and insurance by Mr. H. D. Henderson in his remarkably compact and stimulating *Supply and Demand* (Pitman, 1921), p. 106.

[12] It is an approach used ingeniously by Milton Friedman and L. J. Savage in "The Utility Analysis of Choices Involving Risk," *Jour. Pol. Econ.*, Vol. LVI, No. 4 (Aug., 1948), pp. 279-304.

escape because she is explicitly concerned with analyzing those actions of firms that will give them maximum profits after the event. Unless the management of each firm hypnotizes itself into believing a unique outcome for each act, and disregards all other possible outcomes, the desire to maximize profits does not provide a criterion for selecting the best policy. Even such successful hypnosis would not of course ensure the securing of maximum profits. And the economist will not know these subjective beliefs of managers concerning the future. It is hard to see how Mrs. Robinson's analysis of isolated monopoly can be used to predict the acts of an individual firm.

III.—*Long-Run Viability Analysis*

It does not follow, because an economist cannot predict individual firm behavior in the short run, that he can never predict aggregate firm behavior in the long run. The greater the intensity of inter-firm rivalry, the more competent is the economist to make long-run predictions of aggregate firm behavior. Perhaps, under certain circumstances, we can predict *as if* firms do in fact maximize profits by consciously equating marginal costs and marginal revenues.[13]

A firm's survival depends usually upon its ability to escape negative profits. If there is no competition, a great many policies—all "good" but only one "best"—will permit an isolated monoply to survive; the fact that such a firm exists is no reason for supposing that it is securing maximum profits.[14] However, if there is intense competition, all policies save the "best" may result in negative profits, and in time elimination; then firms that survive must, through some combination of good luck or good management, have happened upon optimum policies. If environmental conditions are such that surviving and competing firms earn zero profits, we can often assume that they are securing maximum profits: it may then be justifiable to pretend that these firms cleverly and deliberately equated marginal revenue and marginal costs in all the various dimensions.[15] However, this "as if" approach can only be validly used for the special case of intense competition in the long run.

Unfortunately, as is well known, long-run equilibrium is in practice never attained. The processes of long-run adjustment are always being interrupted, before their work has been completed, by some new autonomous event. This has important repercussions. It means that maximum possible profits of the moment may be far in excess of zero profits. It means that the essential condition of continued survival becomes the earning not of maximum profits (including the case of

[13] *Cf.* Friedman and Savage, *op. cit.*

[14] Which is the supposition of Mrs. Robinson.

[15] This is Professor Chamberlin's "tangency solution" case.

zero profits), but of zero or positive profits (including submaximum profits). Moreover, it means that the firms that exist at any moment will include both those that are destined to survive and those that are not. Hence the economist cannot proceed to predict actual aggregate behavior, even for those firms that will survive, as if each one arranged its affairs according to the precepts of marginal analysis. If the environment is changing rapidly and unexpectedly, some poorly managed firms will survive and some well managed firms will expire.[16]

Nevertheless, long-run forces are always at work, even if long-run equilibrium is never quite attained. These long-run forces of adjustment operate in the main through the effect of altered conditions of survival and the births and deaths of firms. In most trades and industries, a considerable number of firms are born and die each year, and the existing population of firms in any locality adjusts in time to the current possibilities of survival.[17]

Consequently, so long as competition is sufficiently intense that zero profits *would* result in the long run, the economist can probably detect the direction in which average adjustments will proceed. He can predict directions of change, if he is willing to overlook the variance of individual behavior, *as if* firms always maximize profits in the end. However, he must supplement this marginal analysis with viability analysis or he may reach false conclusions.[18]

For example, some would hold that a 50 per cent profits tax on corporations, even when it is not permitted to "carry-over" losses, will not alter the output and employment of a corporation. According to marginal analysis, is not a given percentage of maximum profits always better than a given percentage of submaximum profits, and does not each corporate entrepreneur consequently ignore the tax in its decisions? The trouble with this view is that it ignores uncertainty and long-run adjustments. The mean retained profit of all corporations, and the variance of their experienced profit distributions, will presumably be reduced by the profits tax. Consequently, fewer corporations which

[16] In the field of biology we do not make the mistake of attributing outstanding analytical ability to those houseflies that find themselves inside a warm house on a cold night. We realize that flies that are just as clever are dying outside. Those entrepreneurs who survive are those who took a satisfactory course of action (not necessarily the best) for some reason (not necessarily the correct one).

[17] One often fails to appreciate the extent of business fatalities due to preoccupation with the successes of existing firms; such myopia might be lessened if more periodicals bore such doleful names as DEATH or MISFORTUNE.

[18] These statements assume that there are always some survivors. In some trades—*e.g.*, small roadside eating places—there may be such a relatively large and steady influx of new annual capital, supplied by perennial optimists who want to be their own bosses, that optimum policies cannot even ensure survival. Hence, while matters might settle down to some "steady-state" flows, the identity of existing firms may be constantly changing.

now exist are likely to survive, and fewer new corporations are likely to come into existence. An economist naturally cannot predict which corporation will now die rather than live, or will now never be born at all, but he should be able to form a reasonable opinion concerning the incidence of a profits tax upon the number of corporations.[19]

In predicting the consequences of some environmental change, such as a new tax, subsidy, or technology, the economist can only adopt the *as if* approach, and employ marginal analysis, if there is intense competition. However, he can then employ viability analysis also; he can consider the altered conditions of survival that will now, through natural selection, affect the character of firms existing in the future.[20] Will large firms now have a better or poorer chance of survival relative to small firms? Will firms that employ skilled labor now have a poorer chance against firms that employ unskilled labor? A consideration of these questions will indicate whether firms of the future are likely to be larger and employ more skilled labor. The character of the prediction may be the same whether the marginal analysis or the viability analysis is employed, and so the issue may seem rather immaterial; however, the language of the former method seems pedagogically and scientifically inferior because it attributes a quite unreasonable degree of omniscience and prescience to entrepreneurs.[21]

IV.—*"Monopolistic Competition" and "Imperfect Competition"*

Some of the more important differences between the theories of competition with product differentiation (Professor Chamberlin) and isolated monopoly (Mrs. Joan Robinson), as they affect the ability of economists to predict entrepreneurial behavior, can now be indicated briefly.

Professor Chamberlin's theory is primarily a long-run theory; exit and entry and rivalry are an integral part of the theory, and the cost curves of his diagrams are explicitly long-run cost curves. On the other hand, Mrs. Robinson's theory, while it could be long run at times, gives the impression of being primarily concerned with the short run. It has already been pointed out that it is invalid to assume short-run

[19] If a firm, before the imposition of a profits tax, had an annual mean profits expectancy of zero, and a Gaussian distribution of profit and loss possibilities around zero with a standard deviation σ, the expected profit with a 50% tax on profits will be \$–.2 σ. Moreover the new variance will be .53 of the old. Altogether not a very happy prospect!

[20] Some of the consequences of this viewpoint are touched upon by E. A. G. Robinson in a recent book review (*Economic Journal,* December 1950, p. 774).

[21] How many students—especially the more sensible and independently minded—have not objected to the notion that firms do maximize profits? They seem to understand the survival approach far more readily. It is the author's opinion that economics teachers will do well to combine viability and marginal analyses—the survival and "as if" approaches—in the lecture hall.

profit maximization; hence her theory of "imperfect competition" is an invalid tool for predicting individual firm behavior in the short run.[22]

Mrs. Robinson has to assume that each firm succeeds always in making the most profitable adjustment possible to the situation in which it finds itself; Professor Chamberlin does not have to make such an unrealistic and rigorous assumption. Mrs. Robinson has to assume maximum profits, as she does explicitly in the quoted passage above, because "imperfect competition" does not provide any other theoretical *modus operandi*. In the case of "monopolistic competition," no explicit assumption that firms in fact always secure maximum profits is necessary for, besides firm entry and exit, it stresses inter-firm rivalry in terms of price and output, quality, and selling effort. Hence, profits are always being either eliminated or severely confined through competitive pressures, and surviving firms must in the long run adopt either optimum or almost-optimum policies. This contrast possesses significant implications.

"Imperfect competition" is a study of a firm in isolation for the most part; "monopolistic competition" is a study of the competitive adjustments, in many dimensions, of firms that sell differentiated products. Consequently Mrs. Robinson can only employ marginal analysis, whether in the short or long run, but this employment is unrealistic and unjustifiable; nor can she properly employ viability analysis. Professor Chamberlin, stressing the long run, can adopt the "as if" philosophy and make decent approximations with marginal analysis; or he can use viability analysis to secure approximations.[23]

V.—*A Possible Modification of Monopolistic Competition*

It would seem that Professor Chamberlin's theory of competition with product differentiation, with one important modification already intimated by Triffin,[24] provides a useful theory of value that can aid the economist in predicting the behavior of firms.

This vital modification would be to recognize that the group is coextensive with the economy. Chamberlin's revolutionary contribution was his vision of a world of competing and differentiated products. Also, it is well known that high cross elasticities are as often among different kinds of physical products as among products of the same technological class; there may be more competition between Cadillac cars and mink

[22] However, it remains a very useful tool for managers in the short run, for it explains what should be done to maximize profits if the management can only form some unequivocal opinion regarding the future outcome of each policy.

[23] The word "approximations" is used because, according to the original and present version of monopolistic competition theory, the tangency solution of zero economic profits is an extreme possibility and not a theoretical necessity.

[24] *Op. cit.*, p. 85 *et seq.*

the likely character of those firms in certain situations that survive in the long run. The requirement is that intense competition prevails, not necessarily among firms selling the same product in the same place, but among rival collections of capital that compete in many overlapping markets. Survivors will then tend to earn small or zero profits. The economist can then employ viability analysis, that is his knowledge of the forces of natural selection in the economic environment, to predict those characteristics that survivors must eventually possess. These survivors, consciously or not, will have made the right decisions; if long-run equilibrium were attained, they would be found, whether from luck, habit, or ability, equating marginal costs and receipts. Under these circumstances an economist can pretend that firms do succeed in maximizing profits; but this is only valid in terms of long-run analysis when there is intense competition. It is for this reason that Professor Chamberlin's use of marginal analysis in his theory of "monopolistic competition" is acceptable as an approximation; surviving firms compete sufficiently that long-run profits must be meager, and when profits are meager there is little latitude for suboptimum policies.

The logical justification for employing marginal analysis in monopolistic competition might be even stronger if the group concept were dropped, and each firm were conceived to be in competition with various firms selling and buying different things in a variety of markets. The obvious fact of product differentiation would then not seem to suggest, so falsely but insidiously, the inevitability of monopoly profits throughout the economy. It would still be possible to make generalized predictions, applicable to a group of similarly situated firms, based on a study of a representative firm that does not exist. The characteristics of survivors can then be predicted but not the fate of any actual firm of the moment. This is one of the paradoxes of value theory.

A Note on the Uses of Marginal Analysis

The following note is appended lest "antimarginalists" should seize upon some of the preceding assertions as grist for their mill.[30]

If an entrepreneur knew all relevant facts and functions with cer-

[30] The following are some of the more important references to the marginal analysis controversy, and to problems arising from uncertainty, that have appeared in the *American Economic Review:* R. A. Lester, "Shortcomings of Marginal Analysis for Wage-Employment Problems" (March, 1946); Fritz Machlup, "Marginal Analysis and Empirical Research" (Sept., 1946); R. A. Lester, "Marginalism, Minimum Wages, and Labor Markets" (March, 1947); Fritz Machlup, "Rejoinder to an Antimarginalist" (March, 1947); H. M. Oliver, "Marginal Theory and Business Behavior" (June, 1947); F. H. Blum, "Marginalism and Economic Policy: A Comment" (Sept., 1947); L. G. Reynolds, "Toward a Short-Run Theory of Wages" (June, 1948); R. A. Gordon, "Short Period Price Determination" (June, 1948); and R. A. Lester, "Equilibrium of the Firm" (March, 1949).

tainty, and also possessed sufficient computational ability, a careful equating of the proper marginal values would always secure him maximum profits. Moreover, marginal analysis would be essential for indicating what facts and relationships had first to be ascertained, estimated, or assumed. The orthodox theory of the firm, granted perfect knowledge of present and future, comprises a set of logical propositions which are in themselves irrefutable. The real question, in view of the actual uncertainty of the future, relates to their applicability.

As a matter of fact, a corporation economist, but not a government economist, should use marginal analysis even when dealing with problems involving the uncertain future. Once he has decided what future values to assume, for important variables and functions, he should introduce them into the formulae dictated by marginal analysis. Having made his assumptions, he needs marginal analysis to show what policies can yield what it is hoped will be maximum profits. If retrospect reveals that the realized profits are submaximum, and that other policies would have been more profitable, that will not be the fault of marginal analysis but of the disproved assumptions that were employed.

The whole situation is somewhat perplexing. As we have seen, the assumption that firms seek maximum profits does not enable the economist to predict the behavior of an individual firm. However, the fact that few if any firms ever do secure maximum profits does not mean that managers should never employ marginal analysis. Quite the contrary appears to be the case. Marginal analysis, given a set of expectations, will tend to give the greatest possible profits if the future confirms the expectations. In so far as the future can be dimly sensed, the use of marginal analysis should increase firm profits more often than not. Mrs. Robinson notwithstanding, it is not necessary to assume that firms do seek and secure maximum profits in order for marginal curves to be validly employed by *entrepreneurs,* however invalid their employment by economists at times.

Marginal analysis of unique future assumptions, that is the logic of profits maximizing, should be stressed even more in Business Administration than in Economics.

SUPPLY AND DEMAND ANALYSIS OF INTEREST RATES: A FURTHER ATTEMPT AT SYNTHESIS

By ARTHUR H. LEIGH*

Most of the theories which have been developed to explain market rates of interest are built around a supply and demand relationship. They differ widely in their selection of the variable or variables the demand and supply of which is taken to determine the rate and in their analysis of the forces underlying supply and demand. This paper attempts to show that a theory of interest rates based upon the supply and demand for loanable funds[1] provides a framework into which most of what is useful in other theories can be integrated and that a theory developed in this way is sufficiently broad in scope to be conveniently applicable to most problems in which interest rates play an important rôle. Its further purpose is to explore the extent to which an essentially partial and non-mathematical analysis of interest rates can be useful and accurate. Completeness in the explanation of interest rates (or of virtually any other magnitude or set of magnitudes in an economy) can be approached only in terms of a general equilibrium system such as that of Walras, but it may be true that beyond a certain point in this direction gains in completeness are more than offset by losses in clarity and manageability.[1a] I shall thus follow the common practice (with its many pitfalls) of selecting from numerous possible variables those which appear most relevant to the present problem.[2]

* The author is assistant professor of economics at Reed College.

[1] For one of the best discussions of interest rates in these terms (known to the present writer), see D. H. Robertson, "Mr. Keynes and the Rate of Interest," *Essays in Monetary Theory* (London, P. S. King, 1940), Chap. I and D. H. Robertson, "Some Notes on Mr. Keynes General Theory of Employment," *Quart. Jour. Econ.*, Vol. LI (Nov., 1936), pp. 175-91.

The "supply of loanable funds" is here intended to mean the flow of purchasing power offered for securities and other claims (including corporate equities) at various possible net rates of return, with the demand for loanable funds having a corresponding meaning.

[1a] *Cf.* A. P. Lerner, "Interest Theory—Supply and Demand for Loans, or Supply and Demand for Cash?" *The New Economics*, ed. Seymour Harris (New York, Alfred A. Knopf, 1948), pp. 655-57.

[2] The reader will note differences among the sections of this paper with respect to the degree of abstraction from reality, *e.g.*, between the discussion of the theory of real capital and the discussion of some of the characteristics of the loan market. These differences, though they may at times be confusing, appear inescapable in a synthesis of different approaches to the problem.

Through most of the following discussion I shall make the common abstraction of speaking in terms of *the* rate of interest. No systematic attempt will here be made to analyze the important and complex interrelationships between different rates on various debt instruments which include components of risk premia, transaction costs, and monopolistic charges in various proportions. The common assumption is that there is sufficient fluidity of funds among different markets and sufficient arbitrage among individuals and institutions which lend and borrow that the whole structure of rates can meaningfully be treated as rising or falling in response to changes in the over-all supply and demand for loanable funds.[3]

The inconclusiveness of part of the discussion to follow is due largely to the lack of adequate knowledge about significant variables and relationships. Perhaps this formulation can serve to indicate more clearly the nature of these inadequacies.

I. *Major Components of the Demand and Supply of Loanable Funds*

The most important element on the demand side of the market for loanable funds is of course the demand by business firms for funds to finance investment and replacement not provided for out of the firm's own funds. There can be no doubt that this demand varies directly with the prospective profitability of real investment generally as estimated by business executives.[4] There is, however, a wide range of possibilities as to the interest elasticity of the demand for loanable funds.

As a limiting case we may assume that entrepreneurs have such perfect knowledge and foresight that they can know future rates of

[3] Statistics indicate a fairly high correlation between long-period trends of interest rates on various kinds of instruments, although it is clear that the various short-term rates are subject to many more cyclical and other short-period influences than are long-term bond yields and other long-term instruments. Historically, short-term rates are markedly influenced by financial crises such as those which occurred in 1893, 1907, 1913, 1920, and 1929, while long-term securities do not reflect such sharp fluctuations. For convenient sources of interest rate and bond yield statistics, see Frederick R. Macaulay, *The Movement of Interest Rates, Bond Yields, and Stock Prices in the United States Since 1856* (New York, National Bureau of Economic Research, 1938); Board of Governors of the Federal Reserve System, *Federal Reserve Charts on Bank Credit, Money Rates and Business* (Washington, D.C., 1941). For further theoretical studies of the relationships between interest rates on different kinds of securities, see Friedrich A. Lutz, "The Structure of Interest Rates," *Quart. Jour. Econ.*, Vol. LV (Nov., 1940), pp. 36-63 [reprinted in *Readings in the Theory of Income Distribution,* ed. Committee of the American Economic Association (Philadelphia, Blakiston, 1946), pp. 499-529] and works there cited; also F. Lavington, "Short and Long Rates of Interest," *Economica*, Vol. IV (1924), pp. 291-303; M. Kalecki, "The Short Term Rate and The Long Term Rate," *Oxford Economic Papers,* No. 4 (Sept., 1940), pp. 15-22; J. R. Hicks, *Value and Capital* (Oxford, Oxford University Press, 1941), Chap. XI.

[4] The theory of the real rate of return on investment is discussed below.

return on all new investment opportunities, that there is a very high degree of mobility of investment, that entrepreneurs attempt to maximize profit, and that all investments are equally risky or that rates of return are calculated after allowance has been made for differences in risk. If the marginal productivity of capital is a function only of the total quantity of capital in existence, then for any relatively short period of time it would be unaffected by the amount of new investment taking place. The result would be an almost perfectly elastic demand curve for loanable funds at the level of the marginal productivity of capital.[5] Businessmen would be willing to borrow to invest (or to invest their own liquid funds) so long as they could do so at a rate no higher than the return they will receive upon this increment of capital.

If, however, the rate of return on new investment were a function not only of the total quantity of capital in existence but also a declining function of the quantity of *new* investment being undertaken during any given period of time,[6] then the demand curve for loanable funds would to that extent be a negatively sloping curve. A negative relationship may exist between the rate of return and the pace of new investment (1) because a large flow of new investment may force up the prices of some investment goods and other costs of capital construction, (2) because there may exist only a limited number of investment plans ready for execution and a relatively long period of time may be required for the working out of profitable new ones, and (3) because at any time in a progressing economy there is not just one prospective yield on real investment but a wide range of prospective yields.[7] Thus, at high interest rates, funds would be demanded only for the more profitable investments and at lower rates more funds would be demanded, some of which would be channeled into less profitable ventures.

At the opposite extreme we may assume that because of great uncertainty about future market conditions or because of the relatively low importance of interest as a cost item in business planning or because businessmen often plan to expand operations for reasons other than the maximization of profit, all investment decisions are based upon

[5] Even though it were assumed that the rate of return on real investment tends to fall as the total stock of capital in an economy increases, the increment in the total stock resulting from the investment of a relatively short period such as a month or even a year would be too small relatively to the total to have any appreciable effect upon the rate.

[6] For a convenient diagrammatic representation of this set of relationships see A. P. Lerner, *The Economics of Control* (New York, Macmillan, 1944), p. 336.

[7] These explanations are, of course, short-run in character. Thus, the negatively sloping curve would have to be interpreted as relating the various rates of return associated with various possible quantities of net investment for the present (short) interval of time, *given* some specific quantity of new investment which had been carried on in immediately preceding periods.

considerations other than the rate of interest and that the volume of investment is therefore unaffected by interest rates. An intermediate set of assumptions appears most realistic. Although the demand curve for loanable funds on the part of individual entrepreneurs may be very inelastic within a significant range, there is probably a maximum rate above which many of them would not borrow, and this maximum rate probably varies between entrepreneurs. The aggregate demand for loanable funds which is the composite of all individual demand functions may therefore have a significant negative slope.[8]

The consumer loan component of the demand for funds is complicated to a greater degree than is the business component by wide variations in the nature and purposes of the loans obtained by consumers (including home buyers). The far wider range of explicit rates in this category of loans is attributable partly to the prevalence of ignorance and irrational behavior on the part of borrowers and partly to the high transaction costs and the "high pressure" or fraudulent tactics of some lenders in this part of the loan market. When consumers borrow to purchase non-durable goods or services in excess of those purchasable with current income, their demand is based, in so far as it is rational at all, upon their choice of a time pattern of consumption which differs from the time pattern of their income and bears no clearly discernible relation to the productivity of real capital. When, however, such loans are for the purchase of houses or other durable

[8] There has in recent years been much controversy and some empirical investigation of the influence of different levels of interest rates on the volume of investment.

One study, the results of which were reported and discussed in a series of Oxford Economic Papers from 1938 to 1940, indicated that interest rate changes exerted only a slight influence on investment decisions, due primarily to the importance of other considerations including risk and uncertainty. *Cf.* H. D. Henderson, "The Significance of the Rate of Interest," *Oxford Economic Papers,* No. 1 (Oct., 1938), pp. 1-13; J. E. Meade and P. W. S. Andrews, "Summary of Replies to Questions on Effects of Interest Rates," *ibid.,* pp. 14-31; R. S. Sayers, "Businessmen and the Terms of Borrowing," *Oxford Economic Papers,* No. 3 (Feb., 1940), pp. 23-31; P. W. S. Andrews, "A Further Inquiry into the Effects of Rates of Interest," *ibid.,* pp. 33-73. *Cf.* also J. Tinbergen, *Statistical Testing of Business Cycle Theories, I: A Method and its Application to Investment Activity* (Geneva, League of Nations, Economic Intelligence Service, 1939). G. L. S. Shackle in his article, "Interest Rates and the Pace of Investment," *Econ. Jour.,* Vol. LVI (March, 1946), pp. 1-17, elaborates upon the relatively great importance of risk, the influence of which tends to overshadow that of interest rates in investment decisions. He suggests that another reason why businessmen tend to deny that interest rates have much effect upon their decisions is that interest rates change less frequently and are not called to the attention of businessmen as frequently or as spectacularly as are other influences such as price changes and changes in technology. He points out, however, that "where, as with homes, doubt concerning future return is small, there is nothing in what we have said which contests the belief that the interest rate can powerfully affect the demand price and thus the pace of investment in a given type of instrument." A shift of emphasis from the influence of interest rates on the volume of credit, the pace of investment and the level of employment and toward its influence on the distribution of incomes and upon capital values is discussed by Henry C. Wallich, "Changing Significance of the Interest Rate," *Am. Econ. Rev.,* Vol. XXXVI (Dec., 1946), pp. 761-87.

equipment, the consumer to the extent that he is acting rationally would refuse to borrow at a rate in excess of the ratio of the expected net service yield to the cost of the durable good.[9] The demand for loans of this type would therefore to this extent be affected by the productivity of real investment in durable consumers' goods. There seems little doubt, however, that rational calculation is less common in the case of consumer loans than in the case of business loans. Nevertheless, it appears safe to assume that the aggregate volume of consumer loans demanded per unit of time is negatively related to the structure of rates and that this demand function, like that of business loans, fluctuates with the level of business activity and business optimism.

The government demand is subject to influences which cannot be reduced to generalization in this context, but federal demand for funds is probably very inelastic during those periods of national emergency when government borrowing is most important. Institutional factors such as the relationship between the federal government and the banking system set government borrowing apart from private borrowing, although it must be considered in this discussion as one of the forces influencing the over-all supply and demand for funds and the level of interest rates. State and local government demand for funds appears to be less interest-inelastic and more likely to fluctuate with the level of business activity than is federal demand and in these respects bears a closer resemblance to business borrowing.

The component of the supply of loanable funds which has received most attention in the more traditional discussion is personal savings in the sense of that part of the flow of personal income not currently spent for consumption goods and services.[10] The Keynesian influence

[9] It may be noted that with competitive conditions and rational behavior, the cost of borrowing to purchase a durable good should be very nearly equal to the cost of leasing a similar unit of the same good, and it should therefore make little difference to the consumer which form of contract he makes apart from the fact that he would be differently affected by changes in prices in each of the two situations.

[10] In the discussion which follows, net personal savings will mean total savings by individuals during a period of time minus total dissaving by other individuals during the same period.

A more important problem of definition arises from the use of current income to purchase consumers' durables such as houses and automobiles. Such disposal of income could reasonably be treated as savings which are used to purchase capital goods, *i.e.*, used for investment. A further problem would then be where to draw the line between the goods the purchase of which would be "current consumption" and those goods the purchase of which would be "investment." These "savings" would, of course, not increase the supply of loanable funds, but they do finance investment for which funds might otherwise have been borrowed. Of course, it may also be argued that current income spent for non-durable consumers' goods serves to finance purchases for which funds might otherwise have been borrowed. Although important for some problems, these questions need no further discussion for the purposes of this paper. I shall treat personal savings used for the purchase of consumers' durables as identical in effect to personal savings used directly to purchase any other type of investment or capital good.

which treats savings and investment as functions of income has to a large extent superseded the Marshallian approach, which treats these variables as functions of the interest rate. Thus, it is now common to assume that the interest rate elasticity of the volume of saving per unit of time is very low within a wide and relevant range. This is not a closed issue. We may still find that some of the critics of the Marshallian assumption that the total volume of saving is positively influenced by a rise in the interest rate (and *vice versa*) may have gone too far. Adequate empirical evidence for a conclusion either way is yet to be found.

The volume of net saving cannot be taken directly as a component in the aggregate supply of loanable funds. A tendency to hoard or to dishoard may intervene between the volume of saving and the supply of loanable funds from this source within any given interval of time.

Hoarding (increasing stocks of cash) by individuals and corporations arises chiefly from one or both of two causes: (1) the holding of funds received as income or received from the sale of other assets until it is convenient or feasible to invest, *i.e.*, purchase or construct some real capital good, or (2) the more conscious and deliberate holding of cash in preference to goods or securities in order to speculate upon a fall of prices or a rise in interest rates.[11] It is here that the "liquidity preference" concept enters the theory.[12]

When an individual saves, he may use that part of his income to

[11] For the most part, this phenomenon can be equally well represented as a fall in velocity ("V") in the older transactions equation of exchange. The most important aspect of the matter is that to the extent that hoarding takes place ("V" falls) without being offset by an increase in the quantity of money, goods are not purchased and income is not created.

[12] The liquidity preference theory of interest taken alone places far too much emphasis upon one particular form in which assets can be held, *i.e.*, upon only one of a great many alternative uses to which accumulated income can be put. Factors underlying the decision to save appear to be as important to the theory of interest rate determination as are decisions to hoard or to dishoard. Keynes provided a correction of earlier theory which overlooked the importance of hoarding and dishoarding, but in placing this factor at the center of his theory of interest, he has in my opinion swung to an opposite and equally inadequate extreme. It should also be noted that the liquidity preference concept when given such a central rôle in the theory of interest requires considerable stretching in order to apply it to the operations of commercial banks which constitute a substantial source of supply of loanable funds.

Among numerous controversial writings on the relationship between the supply and demand for cash balances (the liquidity preference theory) and the supply and demand for loanable funds are the following: J. R. Hicks, *Value and Capital* (Oxford, Clarendon Press, 1939), Chap. 12; A. P. Lerner, "Alternative Formulations of the Theory of Interest," *The New Economics*, ed. Seymour Harris (New York, Alfred A. Knopf, 1948), pp. 634-54; A. P. Lerner, "Interest Theory—Supply and Demand for Loans, or Supply and Demand for Cash?", *Rev. Econ. Statistics*, Vol. XXVI (May, 1944), pp. 88-91; William Fellner and Harold Somers, "Alternative Monetary Approaches to Interest Theory," *Rev. Econ. Statistics*, Vol. XXIII (Feb., 1941), pp. 43-48; Lawrence Klein, "Stock and Flow Analysis in Economics" (and comments following), *Econometrica*, Vol. 18 (July, 1950), pp. 236-52.

purchase a security or a claim, to purchase or construct some real capital good, to repay a debt, or finally, to increase his cash balance. In the first case his savings would constitute a part of the supply of loanable funds, and in the second case he is financing investment without the mediation of the loan or security markets. In the third case he does not necessarily and directly add to the supply of loanable funds since his creditor may hoard the money (assuming that the debt is paid in money), or if the creditor is a bank, the money may simply be destroyed. But debt repayment may indirectly add to the supply of funds by making it possible for the creditor to reloan. To the extent that an individual's savings are actually hoarded in the form of money, however, they do not constitute a part of the supply of loanable funds for that period.[13]

Other major sources of the supply of loanable funds are retained corporate earnings, funds set aside by firms out of sales receipts to provide for the maintenance and replacement of capital, the funds of investment institutions including insurance companies and governmental agencies, and bank credit.

Retained corporate net earnings are in some ways parallel to personal savings as a source of supply of loanable funds, but with somewhat different qualifications. The supply of loanable funds from this source in the schedule sense consists of that part of corporate earnings (plus other liquid assets) which management decides to offer on the security market or decides to lend to affiliated firms at various possible levels of interest rates. These decisions would be affected not only by the size of net income and the amount of it to be distributed as dividends, but also by the desire to hold larger or smaller cash balances and by the amount of real investment which management wishes to finance from earnings.[14] Decisions to retain or not to retain earnings, *i.e.*, dividend policy, may be influenced by market rates of interest in so far

[13] There is a case for treating cash balances as a form of investment and putting the demand for increases in such balances on the demand side of the market for funds rather than treating them as an influence affecting the supply side for any given period. Then the marginal utility of this form of investment could be directly compared with the marginal utility or the marginal productivity of any other form of investment and in equilibrium all of these margins would presumably be equal. This case is strengthened by the extent to which some people or firms (*e.g.*, brokers) borrow money to hold as cash balances for use in their business activities. In spite of these arguments, it appears best for present purposes to treat "liquidity preference" as a phenomenon affecting supply because it is common usage today to define investment as the actual purchase or construction of capital goods—a process which creates income and fits into the theories of employment which center around the savings—investment relationship, and it is convenient in a discussion such as this to associate the demand for loanable funds as closely as possible with investment so defined, allowing, of course, for the influence on the demand side of government and consumer demand for loanable funds.

[14] Current net earnings used by the corporation for its own real investment could as well be included as part of the supply of loanable funds provided the use of such funds

as larger proportions of earnings will be retained the more difficult it is to borrow for expansion. Increases of cash balances over and above those needed in the ordinary course of business are commonly motivated by the desire for security even at the expense of some profit, but are probably negatively related to interest rates. The use of retained earnings to finance real investment has the effect of offsetting a potential demand for loanable funds by an equivalent potential supply. Though funds so used do not appear on the supply side of the loan market, they are probably closely related to it. It is reasonable to suppose that if market rates were to rise above a certain level, some of these funds might be diverted to the loan market, and the converse is probably also true.[15] Similarly, if many firms were to increase the volume of investment financed by retained earnings, the supply of loanable funds on the loan market would be reduced, creating some upward pressure on interest rates. Thus the prospective productivity of real investment has a negative effect upon the supply of loanable funds via alternative opportunities for the use of funds, as well as a positive effect upon the demand for funds.

Business firms provide a further source of loanable funds over and above their net earnings arising from the fact that their provision for depreciation and capital maintenance is not synchronized with their purchase and construction of capital goods for replacement. That part of gross revenue which is retained to offset the wearing out or obsolescence of real equipment may be held in the form of cash, or may be offered on the security market until such times as it is expedient to purchase replacement equipment. In the latter case, it constitutes a part of the supply of loanable funds. Again, the relevant decisions are based in part upon expectations of future prices and interest rates and in part upon general depreciation policy. It is quite likely that the quantity of such funds offered on the security market will be positively related to interest rates.[16]

is included in the demand for loanable funds, the corporation here being regarded as lending to itself. This procedure is not followed in the present paper because I believe that it is clearer and simpler for present purposes to "cancel out" these quantities.

[15] It is probable that at given market rates of interest, most businessmen would be more willing to invest in assets with a given prospective yield if such an investment could be financed from retained earnings than they would be if they had to resort to the loan market. The relationship between market rates, prospective rates of return on real investment, and the use of retained earnings is thus by no means a perfect one.

[16] The fact that the setting aside of revenue to provide for depreciation is not synchronized with the purchase of replacement equipment sometimes leads to a contraction or an expansion of incomes, depending upon whether expenditures for replacement fall short of or exceed depreciation allowances out of current revenue. Theoretically, if the offer of such funds on the loan market were to encourage increased purchases of goods by other persons, the depressive effect of the former situation may be slightly alleviated, as compared, at least, to the retention of such funds as cash balances.

Little need be said about institutional savers other than credit-creating banks beyond recognizing their existence in the market for funds. A net flow of savings into savings banks and an excess of total premium payments to insurance companies over benefits paid out can be treated merely as a part of individual saving, the flow of the latter being very little affected, at least within short periods, by changes in interest rates.[17] This flow of savings plus any retained earnings on their assets plus dishoarding or minus hoarding at various possible levels of interest rates constitutes the supply of loanable funds from this source, and this supply is probably a very inelastic function with respect to interest rate changes.[18] Governmental lending agencies such as the Reconstruction Finance Corporation, the Export-Import Bank, and the agencies which lend to farmers provide a supply of funds which is no doubt also very interest inelastic and which is determined primarily by political influences. By channeling funds to (or from) particular markets they probably affect the structure of rates to a far greater extent than they affect the general level of rates.

Of much greater importance to the theory being developed is the rôle of credit-creating commercial banks. Under present conditions in the United States, banks provide a highly elastic supply of loanable funds for many types of borrowers within rather wide limits set by the policies of the government and the Federal Reserve System as well as by the individual bankers themselves. The most important distinguishing feature of this source of loanable funds is that within the wide limits of monetary and banking laws and policy new purchasing power to supply the needs of borrowers both for purposes of investment and of consumption can be created without any deliberate saving from income or any dishoarding by individuals or institutions. From this fact follows the well-known and much discussed rôle of the banks in financing relatively rapid expansion and contributing through contraction of credit to equally precipitous contractions in national income. When planned investment exceeds planned savings, the expansion of bank credit together with any tendency to dishoard constitutes the source of funds for the expansion of money income which increases savings. This process, combined with the unplanned dis-investment brought about by increased sales resulting from expanded income,

[17] This short-run inelasticity of supply with respect to interest rates is not due so much to insensitivity or indifference to interest rate changes (*i.e.*, the ratio of benefits to premiums) as to the fact that the proportion of *new* insurance contracts on which decisions may be affected by this ratio is very small compared to the total of policies outstanding on which the insured is paying premiums to which he committed himself sometime in the past.

[18] The supply of credit from institutions of this type may be influenced by the effect of interest rate changes upon the value of that part of their assets which are held in the form of fixed interest bearing securities, such as bonds.

moves the aggregate flow of savings and the aggregate flow of investment toward equality.[19] It is difficult to generalize briefly, either on theoretical or empirical grounds, about the character of the supply curve for bank credit if, indeed, the idea of a curve or function is applicable at all to this source. For many types of loans there are conventional rates which change rather seldom. Some would-be borrowers are refused loans outright rather than charged higher rates, a kind of rationing system. In other cases different rates are charged different customers at the same time, due to differences in estimated risk, in the terms of the loan contract, and similar considerations. In the absence of evidence to the contrary, it seems reasonable to assume that for those prospective borrowers to whom the banks are willing to make loans at all, the supply curve for such loans is very elastic to some point determined by the reserve position of the banks in general and after that point is reached, the curve may become very inelastic. Even when "loaned up," banks may tend to refuse loans outright to the less credit-worthy borrowers while continuing to lend at the old rates to more-credit-worthy customers. Supply of bank credit may be increased or decreased by the deliberate policy of banking authorities who are supposedly motivated at times by efforts to stabilize the flow of incomes and the level of employment.[20]

II. *Income Changes and the Demand-Supply Relationship*

Mr. Keynes criticized and rejected the "classical" theory of interest rate determination which treated the rate as a market price determined by the intersection of a curve relating the flow of saving to the interest rate and another curve relating the flow of investment to the interest rate. He argued that the relationship between a demand curve and a supply curve for savings cannot determine the interest rate because they are not independent of each other. If, for example, the demand for funds increases so that at current interest rates investors and others

[19] If this expansion begins in a period of considerable unemployment, then production increases more in absolute terms than does consumption. If, however, it occurs in a period of full employment, consumption is reduced primarily by the resulting fall in the purchasing power of a given money income. Thus, money saving becomes real saving which is not necessarily voluntary on the part of the real savers.

[20] As credit-creating banks assume an increasingly important rôle in the supply of loanable funds, the applicability of the concept of "time preference" to the theory of the interest rate becomes less and less apparent. Whatever the nature of the decisions which determine the supply of bank credit, it is difficult indeed to think of them as governed by a subjective preference for present over future goods of like kind and quantity. Time preference, or whatever we wish to call influences which determine the amount of voluntary individual saving, has a bearing upon the general problem only in so far as it affects the quantity of bank-financed investment which can be carried on without inflation and "forced saving."

wish to borrow a larger quantity of funds than savers wish to lend, the interest rate does not merely rise to the intersection of the new demand curve and the original supply curve. Any increase in the quantity of investment which actually takes place without at least an equal and simultaneous fall in consumption will generate an increase in the flow of money income (which may or may not be accompanied by an increase in real income) and this in turn increases the supply of money savings. Thus, no determinate solution to the problem of explaining the interest rate is possible in these terms.[21]

Although the supply of loanable funds is clearly not the same thing as the "supply of savings" (*i.e.*, the volume of money savings per unit of time at various possible interest rates), induced changes in money income and their effects on the supply and demand functions call for discussion in connection with the loanable funds theory of the interest rate. This line of criticism can, in fact, be carried a step further by pointing out that if an increase in investment associated with an increase in the demand for loanable funds leads to rising commodity prices via an increase in money income at a time of full employment, this rising level of prices will alter the various expectations which underly the supply and demand functions for loanable funds. Rising prices may, for example, further increase the demand for funds by creating more favorable profit expectations. They may reduce the size of the cash balances which people wish to hold and reduce the willingness to save by creating expectations of a further fall in the purchasing power of money. On the one hand the general rise in prices may increase the willingness to lend by reducing (at least in the minds of lenders) the risk of default, and on the other hand it may reduce the willingness to lend through the purchase of fixed-interest-bearing securities and claims (as compared with the purchase of equities and real goods). Further, if interest rates are observed to be rising (security prices falling), this trend will affect expectations of future interest rate movements which will in turn affect the supply and demand for loanable funds and hence interest rates. In short, the problem is inherently general and dynamic while the Marshallian supply and demand analysis is partial and static.[22] But does a very similar criticism not apply to many other common uses of Marshallian partial analysis, particularly in those cases where the market in question is so large relatively to the whole

[21] *Cf.* J. M. Keynes, *The General Theory of Employment, Interest, and Money* (New York, Harcourt, Brace and Company, 1936), pp. 177-82.

[22] *Cf.* J. A. Schumpeter, *Business Cycles* (New York, McGraw Hill, 1939), Volume I, p. 78. "Of course, there is very little meaning in an application of Marshallian demand and supply curves to this case. They do not illustrate but rather obscure the nature of the relation between saving, investment, and the rate of interest. Since this relation is the net result of the interaction of all the variables of the system, it can be expressed only in terms

economy that changes in price and quantity within it have a significant effect upon other markets and upon such aggregates as the flow of money income? Markets for labor, for foreign exchange, and even for some important commodities in some countries may serve for illustration. The remainder of this section is an attempt to evaluate the usefulness of the supply and demand relationship as a point of departure for what is readily conceded to be a dynamic problem.

At any point of time, interest rates (prices of securities), in so far as they are not "administered" and are free to move, are determined by immediate competitive bidding on both sides of the market, *i.e.*, by supply and demand in the immediate market sense. The quantities of loanable funds demanded and offered are respectively determined by many factors, including interest rates and expected interest rates, money income and expected money income, prices and expected prices (both relative prices and the general price level), psychological attitudes toward risk and toward consumption versus saving, and generally by numerous other influences, some of which were mentioned in Part I above. Since we are here interested in analyzing interest rate determination, we select this variable, the interest rate, for particular attention and relate it to quantities of loanable funds demanded and supplied in the usual Marshallian *ceteribus paribus* functions.

As a first step toward the general and the dynamic, we may introduce another variable, changes in money income together with their relevant effects, into the simple supply and demand analysis, and in so doing, examine the Keynesian objection outlined above. Assuming for the moment a single loan market with a homogeneous credit instrument, suppose that an initial situation in which a demand curve and a supply curve establish a rate of interest which clears the market is disturbed by an increase in the demand for loanable funds arising from optimistic expectations about new technological discoveries. Unless the supply of loanable funds is infinitely elastic, or unless the supply curve moves to the right *simultaneously* with the movement of the demand curve and to

of the Walrasian apparatus. From the attempt to do so by means of two independent single-value functions of the rate of interest nothing but caricature can result."

Criticism of the Keynesian liquidity preference theory of interest on similar grounds, *i.e.*, that it uses static analysis for an essentially dynamic phenomenon, is expressed by Leontief as follows: ". . . under stationary conditions, (*i.e.*, a situation in which none of the relevant economic variables such as the rate of interest, prices, etc., are changing or are expected to change over time) nobody would hold any money for speculative purposes; that is, that in such a situation M_2 would be *identically* zero. But this is the crux of the whole matter. If the foregoing observation is correct, then in a truly stationary situation, the cornerstone of the Keynesian theory of interest—the direct relationship between the quantity of money and the rate of interest—falls to the ground. (M_1 is assumed not to be a function of p.)" (W. W. Leontief, Comment on Ira O. Scott, Jr., "Professor Leontief on Lord Keynes," *Quart. Jour. Econ.*, Vol. LXIII [Nov., 1949], p. 568.)

a degree at least sufficient to offset the influence of the increase in demand, the rate of interest will rise. I consider it reasonable to suppose that if an increase in supply is normally to be expected to result from an increase in demand, that increase in supply will not occur simultaneously with the increase in demand but only after a significant interval of time during which the funds borrowed are actually spent for investment goods and some part of the new money income thus created is offered on the loan market. These changes do not, of course, occur in sudden large jumps but work themselves out in a continuous process through time.[23] The market rate of interest established by the supply and demand functions here under consideration is thus a moving equilibrium rate changing continuously through time as do the supply and demand functions which immediately determine it. Just as an increase in demand for funds may *after a time* affect the supply of funds via money income changes, so it may *after a time* affect supply via changes in expectations which may be induced by observed movements of the interest rate or of prices which can in turn be attributed to the assumed initial increase in demand. At any point of time, however, a meaningful determinate solution to the interest rate can be obtained in terms of the supply and demand for funds and the influences which underlie these functions.

A simplified summary statement of the influence of money income changes upon the solution of the problem of interest rate determination together with some references to the rôle of elasticity conditions may help clarify the present argument. Let us once more assume the initial increase in the demand for funds. Note that the supply of loanable funds arises not merely from individual and corporate saving as discussed in Part I above, but also from dishoarding by individuals and corporations (*i.e.*, the offering of formerly idle cash balances for loan) and from credit creation by banks. In an extreme limiting case where the quantities of funds offered by all of these components of supply as well as the volume of investment[24] are all independent of the rate of interest, the demand and the supply of funds would both be completely inelastic. If, as has been assumed, there occurs an increase in the demand for funds for the purpose of investment with the result that the quantity demanded exceeds the quantity supplied, some investment plans could not be financed. Whether aggregate money income rises, falls, or remains the same subsequent to the assumed increase in the demand for funds depends upon whether the investment that can be financed during the

[23] The discussion immediately to follow could of course be set up in the form of period analysis. I have not done so explicitly because I do not wish to obscure the essentially continuous character of the processes concerned.

[24] We shall, for the moment, ignore consumer borrowing for non-durable goods and services.

given initial period exceeds, falls short of, or equals planned or intended saving for the same period of time, *i.e.*, whether the algebraic sum of net dishoarding and net bank credit creation is greater than, less than, or equal to zero respectively. If income changes, the inelastic demand and supply curves will accordingly shift over a period of time. In this situation there is no determinate solution to the interest rate problem in terms of supply and demand, and the rate of interest would have no equilibrating influence.

If any or all of the commonly assumed relations exist between the interest rate and the components of supply and demand, there is a determinate solution, *i.e.*, there is a level of the interest rate which would clear the market for funds and the interest rate plays an equilibrating rôle. These assumptions are that saving and the available quantity of bank credit vary directly with the interest rate and that investment and the desired size of cash balances vary inversely with the interest rate. Again, whether money income subsequently rises, falls, or remains the same as a result of the initial increase in the demand for funds depends upon whether the investment which actually occurs at the new, presumably higher, interest rate exceeds, falls short of, or equals planned saving (at the new interest rate but the initial level of money income) for the interval in question, *i.e.*, whether net dishoarding plus net creation of bank credit is greater than, less than, or equal to zero. If and as money income subsequently changes, the supply and the demand curves for loanable funds and hence the rate of interest will also change.

Thus, it is clear that the rate of interest established at any point of time by the demand and supply of loanable funds is not a general equilibrium solution and is not likely to continue unchanged for long unless at that rate planned saving equals planned investment and, in fact, unless every market and every magnitude is in a state of equilibrium.

The introduction of changing expectations and their effects adds even greater complexity to the problem than does the introduction of money income changes, and no attempt will here be made to treat them exhaustively, although I shall refer to them again below. All the components of the supply of and the demand for funds are affected by them, and they may play their part as initiating disturbances in the market for funds or they may themselves be the result of a change in interest rates or in security prices. The supply and demand for some securities are at times dominated by speculative trading based upon expectations of rising or falling security prices rather than upon the intention to earn interest or to borrow for real investment.[25]

[25] *Cf.* R. M. Goodwin, "Keynesian and other Interest Theories," *Rev. Econ. Statistics*, Vol. 25 (Feb., 1943), pp. 6-12, for a discussion stressing the importance of expectations

It is obvious that when influences such as these are accounted for, a great many possible patterns of effects can follow from a given initial disturbance, a fact which increases the difficulty of developing any theory of an equilibrium rate of interest.[26]

III. *Changes in the Quantity of Money, Prices, and Interest Rates*

A question which is very closely related to the foregoing discussion and to which in the light of that discussion there appears to be no single general answer is that of the influence of changes in the quantity of money upon the rate of interest. Again, a set of answers can be formulated, each appropriate for a different set of assumptions. Much depends upon the way in which new money is introduced into the system and upon the direction of its expenditure, and upon the expectations which are induced. Immediate effects differ from long-run effects.

Let us begin by assuming that wages and prices are flexible to the degree usually assumed in Marshallian economics, *i.e.*, sufficiently flexible to adjust toward a position of equilibrium within a reasonably short period of time after some change or disturbance.

If the increase in the quantity of money is the result of a federal deficit with expenditures made directly as wages to government employees and as payments for public works and the like, then there will be a direct increase in the demand for labor and commodities and an increase in incomes. If this expanded money income (including multiplier effects), together with the improved cost-price relationships which may accompany it, improves the general business outlook, it may increase the demand for loanable funds by stimulating new real investment, thus tending to raise the interest rate. On the other hand, increasing money incomes will tend to increase savings, and if the stock of money which has been created exceeds the quantity people wish to hold at the rising level of money income, the effect will be to increase the supply of loanable funds, which will tend to lower interest rates. Thus, the immediate or short-run effects would depend upon the relative strength of these two opposing influences and upon the elasticity conditions which have been outlined in Part II above. If price rises become apparent and if the public generally projects this trend into the future, expectations of a fall in the real value of assets fixed in terms of money may make people more reluctant either to hold cash or to purchase securities of fixed dollar yield. This influence may force

about future interest rates as determinants of the desire to hold cash balances or to purchase securities.

[26] See Part V below for further discussion of the equilibrium concept as it applies to interest rates and to the rate of return on capital.

borrowers to offer better terms if they are to induce lenders to purchase securities in preference to real goods or equities. If, in the longer run, prices rise in proportion to the increased quantity of money so that real income has not appreciably increased, if wages and other costs follow the upward trend thus removing the favorable cost-price relationship, and, finally, if the cash balances people wish to hold bear the same proportion to money income as before, then there will probably be no permanent increase in business activity and no appreciable long-run effects on the interest rate. The rate may not return to the level at which it stood prior to the introduction of the new money, but on *a priori* grounds it is impossible to determine whether it would be higher or lower.

If the new money is injected into the economy by open-market purchases of securities by government or the banking system, or by the making of loans to business[27] in a way which amounts to a direct increase in the supply of loanable funds, the immediate effect will be a downward influence upon interest rates. Other effects, and particularly those of the longer run, will no doubt be much the same in this case as in the preceding case.

If wages or prices or both are rigid for long periods of time, then the short-run effects of changes in the quantity of money discussed above will be correspondingly prolonged. An increase in the money supply brought about by direct governmental expenditures for goods and services may in this case stimulate business activity through expanded volume and through the absorption of unemployed resources. If wages and other costs are rigid while prices are not, this stimulating effect is enhanced by the improved cost-price relationship. In either case, the demand for funds would be increased. If the new money is injected into the system in a way which directly increases the supply of loanable funds, the immediate influence on interest rates may be downward, but even under conditions of rigid prices and/or wages, this effect may be very short-lived, and the stimulating influence upon business activity and upon investment which may soon follow would be likely to exert an upward pressure upon interest rates, at least after the inflow of money has stopped.

Generally speaking, the flexibility or rigidity of prices and wages appears less important to the analysis of the influence of changes in

[27] Banks or government agencies could induce businessmen to borrow increased quantities of funds either by accepting poorer risks or otherwise easing the "rationing" of credit, or by offering loans at lower rates of interest. If the latter method is resorted to, the increase in the quantity of money brought about in this way depends upon a prior lowering of rates unless there should be a simultaneous increase in the demand for loanable funds, in which case the increased quantity of money is not a cause but an effect of increased investment and may be thought of as having prevented or limited a short-run rise in rates rather than having lowered rates.

the quantity of money upon the interest rate than does the way in which the new money is introduced and the direction of expenditures subsequent to the influx of the new money. If people receive additional money, they can either spend it for goods and services, purchase securities, or hoard it. The first choice has a short-run upward influence; the second, a short-run downward influence; and the third, no clear influence at all. Throughout the entire analysis, it is clear that short-run effects of changes in the quantity of money upon the interest rate are more important than long-run effects, the latter in most cases being negligible or unpredictable.[28]

IV. *Elements of a "Real" Theory of Capital and Interest*

A sound and workable analysis of the nature and scope of real capital, the rôle of capital in the productive process, and the nature and measurement of the rate of return on real capital has been worked out in recent years.[29] Although many aspects of the theory of real capital are still controversial, there appears to be increasing agreement on its main outlines. Only the briefest sketch of the theory is necessary for the present purpose of relating it to the monetary and loan market theories of interest discussed elsewhere in this paper.

1. The real rate of return on capital is defined and measured by the marginal productivity of new investment, expressed as the ratio between a net prospective yield and the minimum cost of constructing a new asset capable of producing that yield. Investors will channel their funds into those areas in which the prospective rate of return is maxi-

[28] Where the quantity of money is deliberately increased for the purpose of achieving a higher level of employment, I should place greater reliance upon its direct effect upon the demand for goods and services both for investment and for consumption and upon the improvement in the cost-price relationship which it would probably bring about than upon its supposed effect on incomes via reduced interest rates and increased investment.

[29] Most noteworthy among the contributions to the real theory of capital and interest which have been made during the past thirty years are those of Professor Frank H. Knight, whose development of the theory has appeared in numerous journal articles, among the most important of which are the following: "Neglected Factors in the Problem of Normal Interest," *Quart. Jour. Econ.*, Vol. XXX (Feb., 1916), pp. 279-310; "Professor Fisher's Interest Theory: A Case in Point," *Jour. Pol. Econ.*, Vol. XXXIX (Apr., 1931), pp. 176-212; "Capitalistic Production, Time, and the Rate of Return," *Economic Essays in Honor of Gustav Cassel* (London, George Allen & Unwin, 1933), pp. 327-42; "Capital, Time, and the Interest Rate," *Economica*, Vol. I N.S. (Aug., 1934), pp. 257-86; "The Theory of Investment Once More: Mr. Boulding and the Austrians," *Quart. Jour. Econ.*, Vol. L (Nov., 1935), pp. 36-37; "The Ricardian Theory of Production and Distribution," *Canadian Jour. Econ. and Pol. Sci.*, Vol. I (1935), pp. 2-25, 171-96; "Professor Hayek and the Theory of Investment," *Econ. Jour.*, Vol. XLV (Mar., 1935), pp. 77-94; "The Quantity of Capital and the Rate of Interest," *Jour. Pol. Econ.*, Vol. XLIV (1936), pp. 433-63, 612-42; "Some Issues in the Economics of Stationary States," *Am. Econ. Rev.*, Vol. XXVI (Sept., 1936), pp. 393-411; "On the Theory of Capital in Reply to Mr. Kaldor," *Econometrica*, Vol. 6 (January, 1938), pp. 63-82; "Diminishing Returns from Investment," *Jour. Pol. Econ.*, Vol. LII (Mar., 1944), pp. 26-47; *Ethics of Competition* (New York, Harper Bros., 1935), Chap. X.

mum, allowing for differences in risk and in other costs, thus tending to bring such rates into line with prospective rates in other fields and to establish a general level of rates of return. This quest by investors for maximum rates of return serves also to allocate resources into those fields where they can be most efficient in satisfying effective demand.

2. The most useful concept of real capital includes all of the productive or service-rendering agents which are subject to ownership and capitalization, the major exclusion here being human beings.[30] This inclusive definition is justified because of the similarity with which all such assets are treated with respect to accounting, measurement and valuation, and allocation, differences among them in such respects as durability and mobility being differences only of degree. Differences in durability and mobility are important particularly in their bearing upon the ease and quickness with which resources can be disinvested and reinvested, but such differences do not constitute a useful basis upon which to exclude some assets (*e.g.*, "land") from the capital concept.

3. The definition and measurement of capital as a quantity requires the use of a value numeraire in terms of which the heterogeneous physical capital goods of which it consists can be reduced to a common denominator. To accomplish this valuation or capitalization of an asset, its net return per year (or other unit of time) must first be imputed (*e.g.*, by the use of the marginal productivity principle if it participates with other agents in a process) and its net imputed value yield (after full allowance for depreciation out of "gross"[31] imputed value yield) must then be divided by the appropriate going rate of interest to ascertain capital value. This process is thus an essential part of the pricing system, though conceptually, the theory of capitalization can be carried out without a market pricing mechanism such as we know it, provided some basis for valuation can be established.[32]

4. A sound and sufficient explanation of the accrual of net yield on capital is the fact that if a given amount of current income is devoted to the construction of a new asset, the flow of net income is subsequently increased by some measurable amount for an indefinite length of time. It is important for the purposes of accurate accounting, how-

[30] Even free human beings as productive agents have many of the characteristics of capital as here defined. (*Cf.* James R. Walsh, "The Capital Concept Applied to Man," *Quart. Jour. Econ.*, Vol. XLIX [Feb., 1935], pp. 255-85.)

[31] "Gross" is here intended to mean the full increment to the value product of a joint process imputable to a marginal unit of a given type of capital good from which depreciation on that capital good must be deducted periodically to ascertain its net value yield.

[32] For a more complete analysis of the problem of capital measurement than can be undertaken here see especially Knight, "The Quantity of Capital and the Rate of Interest," cited above.

ever, always to provide for full maintenance of the capital asset out of its gross imputed yield before measuring the net return in question, whether or not the particular asset is to be maintained or replaced. In measuring its return accurately, capital must thus be treated as though it were to be maintained in perpetuity. There would otherwise be no way of comparing the yield of two or more different assets which have different individual durabilities, and no way of knowing whether current consumption is being carried on at the expense of a diminution of capital value. The subjective "time preference" concept is unnecessary for the explanation of the accrual of net return on capital, though it (or its Keynesian counterpart, the marginal propensity to consume) may at times be helpful in explaining the quantity of net capital formation which may be possible within any given period of time without inflation.[33] An increased quantity of capital increases the flow of net income, not because of any supposed lengthening of a time interval between the functioning of certain "original" factors of production and the final consumption of the ultimate product, but merely because it represents an increase in the quantity of productive agents co-operating in the productive process. The concept of periodicity in the over-all productive process plays no essential rôle in the present theory which looks upon that process as continuous, even though individual components either in the sense of physical capital goods or individual identifiable funds of capital value in a more abstract sense may have a reasonably ascertainable or definable beginning and end in time.[34]

V. *An Equilibrium Level of Rates*

If, as is usually supposed, there is a tendency for an equilibrium to be established between the level of "real" rates of return and money

[33] Professor Hayek, in his *Pure Theory of Capital,* relegated "time preference" to what seemed to be a secondary rôle in interest rate determination, indicating that it places a limit upon the historical downward trend of interest rates beyond which people would be unwilling to save over and above necessary replacement of capital and, thus, beyond which no further net accumulation could take place unless something changed either the net rate of yield or the rate of time preference. He agreed that until this ultimate long-run stationary equilibrium is reached, the net productivity of capital is the principal determinant of net rates of return, with time preference affecting the pace of accumulation. *Cf.* F. A. von Hayek, *The Pure Theory of Capital* (London, Macmillan, 1941), Chaps. 17 and 18. In a later article he withdraws this concession, at least in part, giving time preference (defined as "the relative strength of the demands for present and future goods respectively") a more important rôle in the short run, particularly in cases where the pace of new investment changes significantly within a short period of time. *Cf.* "Time Preference and Productivity: A Reconsideration," *Economica,* Vol. XII N.S. (Feb., 1945), pp. 22-25. E. Victor Morgan gives time preference a central rôle in his recent article "Some Thoughts on the Nature of Interest," *Oxford Economic Papers (New Series),* Vol. I, No. 2 (June, 1949), pp. 182-90.

[34] *Cf.* K. E. Boulding, "The Theory of a Single Investment," *Quart. Jour. Econ.,* Vol. XLIX (May, 1935), pp. 475-94.

or market rates of interest, is it most useful and realistic to think of the two levels mutually adjusting to a common level or to think of one of them adjusting to and therefore being determined by the other? In the foregoing discussion I have already alluded to the fact that higher prospective real rates of return tend to raise market rates by increasing the demand for loanable funds and by raising the offer price of such funds through their positive effect upon immediate and anticipated alternative opportunities for the use of the funds of potential lenders. Marked differences in market rates between different countries or geographic areas may similarly be explained in part at least by differences in real rates of return and their effects upon the supply of and the demand for loanable funds. But another important cause of high market rates of interest and a general shortage of loanable funds may be poorly organized and unstable political institutions and the risk and insecurity of property and contracts which accompany them. These conditions may thus be primarily responsible for the lack of real capital relatively to population and natural resources, which serves to explain the high real rates. To put the matter more generally, high market rates resulting from any cause other than high real rates of return may perpetuate high real rates by preventing the net capital formation which could reduce them over a period of time. Thus the line of causality is not always entirely in the one direction from real rates to market rates.

Very briefly stated, the degree to which market rates depend upon the level of real rates of return as discussed in the previous section will vary with the following conditions: (1) the degree of correlation between changes in prospective real rates and the demand for loanable funds, a condition which will be significantly affected by the state of business optimism and the willingness of businessmen to take risks and to face the uncertainty of holding and managing business assets; (2) the elasticity of the demand for loanable funds for the purpose of real investment and the inelasticity of the supply of loanable funds;[35] and (3) the magnitude of the demand for funds for real investment in proportion to the demand for funds for all other purposes. It should, of course, be remembered that risk, transaction cost, and speculative demand for securities are at times strong enough to overshadow actual

[35] This condition is merely an application of the principle which is true of any market that if the demand curve is very elastic (infinitely elastic), movements of the supply curve will not affect the price which is more or less set by the level of the horizontal demand curve, regardless of the position of the supply curve. (*Cf.* Section I above for a discussion of factors influencing the elasticity of the demand curve for loanable funds.) It may be noted that if for any reason the supply curve for loanable funds is horizontal (*e.g.*, in the event that it is an "administered" rate set by the government or the banking system), then real rates would either tend to adjust to the market rate so established or bear no definable equilibrium relationship to it.

prospective yields in influencing security markets and should therefore not be ignored in discussions of market rates.[36]

The equilibrium relationship between real and market rates is in fact only a part of the broader and much discussed question of an equilibrium rate of return on all forms of assets, or rather, an equilibrium *among* rates on all forms of assets. The paragraphs which follow deal briefly with this problem and summarize some of the principal points of the present paper.

1. On the level of least generality, we can speak of the momentary equilibrium of an individual market for claims or securities in which the price clears the market for a very short interval. This equilibrium price or rate is brought about by competitive bidding and fluctuates with the changes in supply and demand.

2. A more general concept is that of an equilibrium set of rates which equates the marginal advantage of holding or disposing of all forms of assets for all individuals and institutions in the economy. If equilibrium in this sense prevailed, the rates on all forms of securities, the yields of all real investments including land, the marginal utility of cash balances, and the marginal utility of current consumption would

[36] Professor Lloyd Metzler in his recent article, "The Rate of Interest and the Marginal Product of Capital," (*Jour. Pol. Econ.*, Vol. LVIII [Aug., 1950], pp. 289-306) suggests an interesting variation upon the equilibrium relationship between the marginal product of capital and the market rate of interest. His argument, as I understand it, is that when an increment of capital is created by voluntary accumulation, the general level of the yield of capital and the level of interest rates drop. This drop in the interest rate increases the capitalized value of previously existing capital. The increment in social capital is thus greater than the increment of private capital by the amount of these capital gains. The social marginal product of capital equals the increment in net yield attributable to the increase in capital, divided by the sum of the voluntarily accumulated increment of capital and the capital gains on old capital. The private marginal product will equal the increment in yield divided by the voluntarily accumulated increment of capital. The latter fraction exceeds the former fraction. Since in equilibrium the private marginal product of capital equals the interest rate, it follows that under these conditions the social marginal product of capital is less than the interest rate. Mr. Metzler also indicates that under certain other conditions the social marginal product of capital may exceed the interest rate in equilibrium.

There appears to be an important difficulty in this line of reasoning. The marginal product of capital (or of anything else) is most commonly and most usefully defined as the ratio between a *very small* increment of net product and the corresponding *very small* increment of capital in some line of investment. This is the ratio which the investor tends to equate to the going rate of interest, thus establishing the equilibrium which Mr. Metzler assumes. But such an increment could not be large enough to affect the general level of interest rates or rates of return for the economy as a whole, and hence it is difficult for me to see how it could give rise to capital gains to owners of existing capital. The individual investor rightly takes as given at any time the going rate of interest and adjusts his investment activities to it without himself affecting it. His own contribution to the total capital stock of the economy within a period of time short enough to be within his planning horizon would necessarily be relatively infinitesimal and insignificant. Mr. Metzler's article does, of course, emphasize a very important and often neglected aspect of capital theory, the influence of changes in the general level of interest rates upon capital values.

all be equivalent to all marginal buyers and sellers of assets so that there would be no incentive to shift assets from one form to another or to consume some of them currently (or to reduce or increase the rate of accumulation of further assets). Under these conditions, explicit rates would, of course, vary considerably to allow for differences in risk, liquidity, transaction cost, prestige value and the like. This state of equilibrium would presumably be brought about in a more or less fluid and competitive economy through arbitrage in assets and through the channeling of new savings into those fields in which the net advantage appeared greatest. It could be actually realized only if a period of time sufficiently long to allow for these adjustments to take place could elapse without any other changes occurring such as technological developments or new discoveries of natural resources. Monopolistic elements could, of course, alter the nature of the final equilibrium, but so long as these elements were stable, they could be incorporated within the definition of this equilibrium concept. Although it is clear that such conditions could not be realized in fact, this concept is useful in defining a kind of norm toward which rational behavior on the part of asset owners and income receivers would tend to move the general rate structure. It provides also a further insight into the linkage between various rates on loans and claims, various rates of yield on real investment, the liquidity advantage of cash balances, and the choice between current consumption and accumulation of assets by setting up an equivalence among several margins of choice at once.[37]

3. A still more general equilibrium would add to the conditions stated in (2) above the requirement that all commodity markets be in equilibrium, all factor markets be in equilibrium, and that planned saving and investment be equal. Most of the comments in (2) would apply here as well. Explanation of the determinants of this equilibrium level would draw upon some of the earlier sections of this paper. Since the marginal productivity and marginal utility of all forms of assets are assumed to adjust to each other, it would be true to say that the equilibrium level is mutually determined by the rates of return on all assets and, hence, by the basic determinants underlying each of these rates of return. It is only where one particular form or class of assets accounts for a predominant proportion of all assets and especially where its rate of return is but little affected in fairly short periods by net additions to it that one could usefully speak of the rate of return on that class of assets as determining the equilibrium rate on others in the sense that others adjust to it rather than *vice versa*. Only under

[37] *Cf.* Harold M. Somers, "Monetary Policy and the Theory of Interest," *Quart. Jour. Econ.*, Vol. LV (May, 1941), pp. 488-507, reprinted in American Economic Association, *Readings in the Theory of Income Distribution* (Philadelphia, Blakiston, 1946), pp. 477-98.

these assumptions, for example, could it be argued that the rate of return on real capital investment sets the equilibrium level of rates of return on all forms of assets.

4. If to all of the conditions stated in (2) and (3) above, we were to add that net saving and net investment be zero and that no technological change or further discoveries of natural resources were possible, then we might approach a true long-run, stationary equilibrium. There would always be a tendency for all rates to approach this equilibrium and no tendency for departure from it. This is, of course, an extreme case.[38] We can perhaps justify the assumption of secularly diminishing returns to new investment as the economy accumulates capital in the absence of invention and discovery, based on the facts that some resources cannot be augmented through time except at higher and higher unit cost and that the most productive investment opportunities will be exploited first during the process of a region's development.[39] If we make the more realistic assumption that discovery and expansion continue indefinitely, it is very difficult to make any generalizations about the future historical course of the equilibrium level of rates of return on investment described in (3) above. Even if a downward trend were assumed, however, it would be difficult to say what force would place a limit upon the secular fall in rates of return and hence upon further accumulation, other than the doubtful idea of a specific and static rate of "time preference."[40]

The second and third versions of equilibrium appear most useful. They assume diminishing returns to investment in each individual form of asset and to increments of consumption but not necessarily to accumulation in general through time. They do not assume static conditions, and to be useful, they do not require that the general equilibrium condition be realized. They merely define a norm in terms of which

[38] It bears some resemblance to the classical notion of an ultimate stationary equilibrium in which no further accumulation would occur because the rate of return available on real investment would have fallen so low as a result of past accumulation that there would be no incentive for further accumulation.

[39] For a discussion of the problem of explaining secularly diminishing returns to net investment as an economy accumulates real capital, see Frank H. Knight, "Diminishing Returns from Investment," *Jour. Pol. Econ.*, Vol. LII (Mar., 1944), pp. 26-47, and Everett E. Hagen, "Capital Theory in a System with No Agents Fixed in Quantity," *Jour. Pol. Econ.*, Vol. L (Dec., 1942), pp. 837-60.

[40] This problem has given rise to the discussion of such questions as whether the rate would each reach zero or approach zero asymtotically, and whether a zero rate is compatible with the existence of any net marginal productivity of real capital. In this connection, Professor Samuelson comments, "My own preference is not to reify the limit by asking what really happens at a zero rate of interest, but rather to concentrate upon the dynamic path toward this limiting condition." For an interesting brief discussion of these and related questions, see Paul A. Samuelson, "Dynamics, Statics, and the Stationary State," *Rev. Econ. Statistics*, Vol. 25 (Feb., 1943), pp. 58-68, and references there cited

movements of rates can be explained. They represent a moving equilibrium through time since at no time is it assumed that no forces are at work tending to alter rates of return in various fields or in segments of the economy large enough to affect all the rest. There is, of course, the difficulty that through the time interval in which individual rates are tending to adjust to the general norm or equilibrium set of rates, that equilibrium will itself have moved as a result of over-all changes.

In conclusion, let me reiterate that the usefulness or meaningfulness of an equilibrium theory of interest rates does not depend upon any close correspondence between the theoretical norm and any of the wide range of interest (and capitalization) rates actually experienced at any point of time. As I indicated in several places above, differences among rates on different assets arise in part from more or less statical causes such as differential risk and monopolistic markets and in part from essentially dynamic causes—continual change in the conditions affecting markets for funds together with frictional elements which limit or slow the process by which specific rates adjust toward the equilibrium level. The latter causes further reflect the limitations of explaining dynamic phenomena by the use of statical methods. The usefulness of an equilibrium theory such as that discussed above rests upon the assumption that the behavior of actual rates is not chaotic and that underlying the bewildering complexity of apparent reality there is a causal pattern about which a set of relatively simple generalizations can usefully be made. The bridge between this equilibrium theory and the facts of experience must consist of a more detailed description of the peculiar institutional framework (including the monetary system and the government) within which asset owners in general, or some particular group of asset owners, manage and exchange their assets. Thus to explain the rate of return on a particular asset at a particular time one would not only need to know something about the equilibrium level toward which it might be expected to adjust, but would need as well to take account of the process by which this movement takes place and of the particular conditions which enhance or impede it.

UNION WAGE PRESSURE AND TECHNOLOGICAL DISCOVERY

By Gordon F. Bloom*

Do rising wage costs stimulate technological discovery? This problem is not only of timely importance, but also of significant theoretical interest. The proposition that wage increases stimulate invention has been advanced by such well-known economists as J. R. Hicks, who has propounded the theory of the "induced invention,"[1] and J. W. F. Rowe, who has advocated that unions ought to keep wages "a trifle above" the current marginal productivity equivalent, in the belief that the greater such wage pressure, the greater is "the stimulus to organization and invention."[2] Does empirical investigation lend support to the hypotheses of these economists that wage increases stimulate technological discovery? What is the relationship between wage adjustments and the rate of technological advance?

These are questions which we shall attempt to answer in the following discussion. We shall, however, confine our inquiry to technological discovery as it is conducted at the research level in industry[3] and shall not attempt to consider—except incidentally—the broader problem of the effect of wage changes upon the introduction of machinery and substitution of factors in the individual firm.[4] Furthermore, we shall consider the effect upon technological discovery of *union* wage pressure, rather than of wage increases *per se,* since union wage pressure may differ in nature and effect from non-union wage adjustments.

While union wage pressure may affect the rate of discovery in a number of ways, it will be convenient, in the interest of orderly discussion, to consider four principal ways in which this influence may be exerted:

* The author is a member of the law firm Foley, Hoag, & Eliot, Boston, Massachusetts.

[1] J. R. Hicks, *The Theory of Wages* (London, Macmillan and Co., Ltd., 1932), Chap. 6.

[2] J. W. F. Rowe, *Wages in Practice and Theory* (London, G. Routledge and Sons, Ltd., 1928), p. 229.

[3] The theoretical analysis which follows is based in part upon the results of interrogation by the writer of directors of research activity in fifty industrial concerns. The writer is indebted to the Social Science Research Council for the grant of funds making possible a survey of industrial research activity.

[4] For a full discussion of the relationship between wage rates and mechanization, see G. F. Bloom and H. R. Northrup, *Economics of Labor and Industrial Relations* (Philadelphia, The Blakiston Company, 1950), Chap. 19.

(1) by altering the volume of research expenditures; (2) by influencing the direction or nature of research; (3) by affecting the proportion of discoveries which are worth exploiting; (4) by changing the average gestation period of inventions.[5]

Wage Pressure and Research Expenditures

The volume of new discoveries is, in part, a function of total expenditures upon industrial research. Therefore, if union pressure on costs induces management to increase research expenditures, unions can be credited with affording some stimulus to the rate of discovery.[6] Does union wage pressure affect the willingness of corporations to tie up funds in research? The decade of the 'thirties was marked by beligerent union organizing activity and a substantial increase in the level of wage rates. During this same period, the research expenditures of industry almost tripled. Similarly, from 1940 to 1946—a period marked by substantial increases in wage rates—employment of scientists in industrial research laboratories increased fifty per cent.[7] It would be premature, however, to impute a causal relationship to this correlation; for in the previous decade, from 1920 to 1931, research expenditures increased five-fold, while wage rates rose hardly at all.[8] It is apparent that other factors must be sought to explain the mushrooming of industrial research activity.

Industrial research directors as a group attribute some importance to wage pressure as a stimulus to research expenditure, but on the whole maintain that the stimulus exerted by rising labor costs has been of minor significance in comparison with other factors. To the question "Have rising wage levels in your company induced it to expand expenditures upon research?," 20 research directors interrogated by the writer replied in the affirmative and 30 in the negative.[9] Further ques-

[5] Number 4 is really an aspect of Number 3 and the two will be considered together.

[6] Of course, the extent to which an increase in corporate research expenditures is able to produce an acceleration in the rate of technological discovery will depend upon the proportion of the stream of invention which flows through these research laboratories. Although many important discoveries originate outside corporation research laboratories, and their initiation therefore is beyond the immediate scope of union influence, most new improvements *eventually end up* in industrial laboratories because large expenditures are necessary to improve most inventions to the point of marketability.

[7] See U. S. Bureau of Labor Statistics, *Monthly Labor Review*, Vol. 70 (April, 1950), p. 369, f. 2.

[8] The wage level was practically stable during the 'twenties. Average hourly earnings in manufacturing, mining and steam railroads were 54.7 cents in 1923 and in 1931, although there was a rise of a few cents in the intervening years. See U. S. Bureau of Labor Statistics, *Monthly Labor Review*, Vol. 51 (Sept., 1940), p. 524.

[9] Information was obtained by personal interview and supplementary mailed questionnaire.

tioning revealed that of the 20 research directors replying in the affirmative to the foregoing question, only 3 were of the opinion that wage pressure had exerted a major stimulus to research expenditure in their companies.[10]

When the same 50 research directors were asked, "Has union organization particularly stimulated research interest in one of these objectives: cost reduction; development of new products?," there was general agreement that union organization has had a negligible effect upon research activity.[11] Rising wage rates have apparently stimulated some increase in research expenditures, but the impact of union organization *per se* has not particularly stimulated interest in industrial research.

The Nature of the Research Process

The effect of wage pressure upon research expenditures can be more fully understood if the research process is subjected to closer scrutiny. If wage increases were to stimulate research expenditures, how would such a stimulus be transmitted? The level of research expenditure in the individual firm depends upon two factors: (1) the rate at which worthwhile projects for laboratory research are suggested by plant and professional personnel and by customers; and (2) the willingness of management to expend funds for exploration and development of these suggestions. These factors are, in turn, dependent upon more general economic circumstances such as the state of business confidence, the level of production and profits, the threat offered by competitive products, and the extent to which competitors engage in research activity. Analysis of these two primary aspects of the research process, however, will serve to illuminate more clearly the rôle of wage pressure in the motivation of industrial research.

Where do ideas for invention originate? What is the relative importance of consumers, management and labor as sources of research ideas? Tentative investigation suggests that the genesis of research ideas depends upon the type of good which is being marketed. If it is a consumers good sold to the general public, most of the ideas for research will come from plant personnel and trained laboratory technicians. Research directors, in general, agree that comparatively few new worthwhile ideas come from the consuming public. In most cases, the suggestions received embody ideas which, though seemingly novel

[10] This applies to the effect of wage increases as a stimulus. A number of research directors indicated that wage increases had raised the expense of research and in that sense had made for an increase in research expenditure.

[11] Of 50 research directors questioned, 43 replied in the negative and only 7 in the affirmative. Of the latter, 4 stated that union pressure had stimulated research in cost reduction, 1 that it had stimulated product development, and 2 that it had afforded a stimulus to both these objectives.

to the public, are known to the company and have already been the subject of experimentation in the laboratory. Frequently, it is true, a new product will be introduced, and then suggestions are solicited from the public as to its possible improvement, but it is seldom that major ideas of a basic nature come from the public.

On the other hand, when the consumer of the product is another industry, ideas for research are much more likely to originate with the consumer. In selling an industrial product, companies customarily employ trained technical salesmen who daily are in contact with purchasing agents and business executives. These users of the company's product frequently discuss their production problems with the salesmen. One such problem which often comes up is how to offset rising wage costs. Out of these discussions to which the salesman brings his knowledge of the technical potentialities of the product are frequently born the ideas of industrial research. It is important to recognize, therefore, that the effect of wage pressure upon research is often to be observed not in the industry in which the wage increases take place, but rather in the industry which supplies the capital equipment. In the hosiery industry, for example, rising wages have not produced much interest among hosiery manufacturers to expand research in cost reduction, partly because the machines which have the most bearing upon labor cost are so highly involved and complicated that the manufacturers prefer to leave the job of improving them to the hosiery machine industry. Problems created by rising wage rates in the hosiery industry are discussed with the salesmen of the machines, and ideas to eliminate labor filter back to the machine-making industry. No doubt this transmission of ideas from consuming industry to producing industry is quite common. Nevertheless, in the hosiery industry—as in industry at large—inventions appear to be more a function of the past technological development of the industry, of the stage in current scientific knowledge and of trends in the use of new products and new materials, than of the level of wage rates.

The source of research ideas also depends in part upon the type of research which is involved. Some companies, particularly in the chemical and electrical products industries, spend large sums for what may be called "pure" or "fundamental" research. Ideas for such research are confined almost exclusively to trained laboratory or professional personnel.

Just as the source of research ideas depends upon the type of research involved, so the sensitivity to wage pressure of the "birth rate" of ideas depends on the nature of the research project. Projects for pure research, for example, have little or no relation to the level of wage rates. Ideas for product improvement and development of new products

exhibit some sensitivity to wage rates, but less than that shown by research ideas designed to improve manufacturing operations. However, even with regard to the genesis of research ideas designed to save labor, management is divided in its opinion as to whether wage increases produce any marked increase in the number of suggestions which can be utilized as the basis for research. When fifty research directors were asked "Do you think that more labor-saving inventions would be discovered if the wage level were raised 25 per cent?," approximately 60 per cent replied in the affirmative and 40 per cent in the negative.[12]

There is no doubt, however, that the large cost of labor in business operations and the consequent desirability of economy in its use affects the attitude and direction of activity of research workers. Furthermore, it seems logical that when wage rates rise, department heads would be more alert to ideas which reduce labor costs.[13] Consequently, if industrial research were composed wholly, or even largely, of projects involving cost reduction, wage pressure would supply a much greater stimulus to research expenditure than it does. Actually, however, the writer's survey of industrial research laboratories indicates that only about 25 per cent of regular industrial research budgets are devoted to cost reduction projects, while in the neighborhood of 75 per cent is allocated to product improvement and development of new products.[14] In view of the fact that most industrial research is composed of product development and that *the percentage of industrial research budgets devoted to product improvement is growing,* it seems doubtful whether union wage pressure will produce any marked increase in the total number of worthwhile *ideas* which flow into or are developed in research laboratories.

Wage levels may, however, exercise a more significant influence upon the disposition of management to expend funds upon research; for an increase in wage rates may be the deciding factor in management's decision to investigate a new idea. At this level, in contrast with the original conception of ideas, it is more proper to think of a marginal

[12] Of the group reporting in the affirmative, a number qualified answers by adding that a wage increase of 25 per cent would stimulate changes in manufacturing *methods,* although such changes might not involve invention in the usual sense of the word.

[13] The higher the proportion of labor costs to total costs in the particular firm, the greater is the probability that wage increases will provide a substantial stimulus to the conception of research ideas.

[14] Cost reduction ranged from 2 per cent to a high of 50 per cent, as a percentage of research budgets, with a modal allocation of 25 per cent for cost reduction and 75 per cent for product development and improvement. Actually, research expenditures on cost reduction are probably somewhat larger than is indicated by this breakdown, because frequently cost reduction projects are not included in the regular research budget, but come under "engineering" or "mechanical and equipment" department expense. Nevertheless, managerial statements leave little doubt that the majority of all research expenditures is devoted to product improvement and development.

relationship between wage costs and research activity, but even here, the significance of wage rates is diminished by a number of considerations.

In large companies, the process of development of new techniques and improved products follows a somewhat standard pattern. First comes the original idea—from a worker, salesman, technician, or department head. An initial grant is requested for preliminary exploration of the idea and at this early stage the funds are generally granted without much scrutiny of the project, if the idea seems "fundamentally sound." After considerable laboratory experimentation, a second grant is requested to undertake a more intensive investigation of the possibilities of the new product or process. Finally, a model is constructed, which may involve investment in an expensive new plant. Naturally, before making any such large outlay of funds, the project is carefully examined with attention to a variety of factors including wage costs. However, costs and revenue prospects cannot ordinarily be estimated sufficiently accurately until the model is built for small wage changes to make much difference in management's willingness to authorize the project. It is only after long research and experience with a working model that a stage of research is reached where wage increases may play a decisive rôle.

At the last stage, a meeting is ordinarily called at which various executives of departments concerned with the research project discuss the merits of the new process or product and determine whether a major expenditure shall be made upon it to prepare it for production. Sales executives, particularly in large companies, seem most concerned about the improvement in quality or sales appeal which results from the new idea, while comptrollers and production men are likely to lay more emphasis on production costs. The level of wage rates is of most significance when the project involves a new process, and particularly when it is a new way of producing a highly standardized product, already manufactured in volume. For example, in a conversation with the writer, the research executive of a large can company made the following observation regarding the influence of wage rates:

> On a standard can produced in volume, the savings attributable to a change in technique can be fairly accurately established. Consequently, the effect of wage increases upon cost can also be accurately gauged and may prove a decisive factor in the decision to go into production. On odd sizes of cans, however, the reduction in cost effected by the new process can less easily be calculated, because the savings will depend in large part upon the volume of production, and the reduction in cost and price will have an effect upon sales which it is difficult to estimate.

The less that is known about sales prospects, the less is known about

margins, and the less importance attaches to the rôle of wage increases. When one comes to new products, therefore, where a new market must be exploited with unknown results, the effect of wage increases is reduced still further in importance. A new product must be "competitive," of course, but ordinarily revenue prospects and production costs are too ill-defined for a rise in wage rates to change management's decision to authorize a large grant of research. Thus, while wage levels are of more immediate concern at the latter stages of the research process, even here they do not constitute a major factor with regard to the bulk of industrial research projects. Most organized industrial research is devoted to development of new products and improvement of old ones; for projects of this type the level of wage rates is ordinarily a minor consideration.

There is, however, a substantial volume of industrial activity devoted to cost reduction and product improvement which is carried on outside organized research laboratories or research departments, but which nevertheless involves technological discovery of a sort. Thus, for example, the foreman, who, on the basis of his daily observation of shop practice, decides that he can secure a more rapid flow of material by a rearrangement of machinery, has made a "technological discovery" of a sort, although the effort and thought which he gave to the problem will not be reflected in an increase in research expenditures. Moreover, even in firms having established research laboratories, considerable research activity may be carried on in "engineering" or "mechanical and equipment" departments. All such research activity which is conducted outside the regular research department or which is not covered by a specific budgetary allotment to research may, for convenience, be termed "unorganized research."[15]

Opinions expressed by research directors suggest that such unorganized research is more sensitive to wage pressure than is the experimentation carried on in research laboratories.[16] Whereas the latter represents to a large extent efforts to invent new and improved products—an endeavor which as has been pointed out is not readily stimulated by rising wage rates—the former is likely to be devoted in large part to improvement of organization of work, an aspect of technological progress which may exhibit a greater sensitivity to the pressure of rising wage costs. However, despite the importance of improved organization of work in reducing costs, the technological changes which involve the largest investment and which make possible the greatest

[15] The designation "unorganized" does not imply that such activity is haphazard. It is unorganized only in the sense that it is not part of the "regular research program."

[16] Further investigation involving interrogation of foremen and heads of engineering departments will be required to ascertain the relationship between wage pressure and such unorganized research. The writer's survey was directed primarily at organized research activity.

economy in manufacturing operations—in short, the technical advances which set the tempo of technological progress—will to an increasing extent come out of organized research laboratories. And as has already been noted, union wage pressure does not appear to have significantly affected the volume of such research.

Factors Affecting Level of Research Expenditure

If rising research expenditures are not attributable to the increasing pressure of wages on profits, how is the mushrooming of industrial research to be explained? If not costs, then what is it that determines how much management spends on research?

The writer has asked the same question of numerous executives: "Why did you spend one million dollars (or a half, or two million, etc.) on research last year? Why was it not more, or less?" The most common reply is that the number of worthwhile ideas added up to that amount. Apparently research budgets are built up from the bottom, rather than from the top down. Only in a few companies is a certain amount set aside for research—say, a certain percentage of sales—and then allocated among various projects. In most cases, the ideas come first and then the allocation of funds. But it is apparent that management must have some guide to determine how many suggestions are to be considered "worthwhile." Probably a rough figure is arrived at by looking at other companies' expenditures and sometimes by using a percentage of sales.[17] The total funds requested by the various departments may add up to more or less than this figure, which then must be revised up or down.[18]

The long-term growth of industrial research appears to be attributable to a number of diverse factors. Its beginnings can be traced to the repercussions of the first World War. During the 'twenties, the high costs left by the war and the inefficiency which had developed during the years of war prosperity produced a reaction which took the form of wide-scale rationalization of industry and energetic efforts to improve technical efficiency. As one company after another set up research laboratories, research became part of the competitive practice

[17] The proportion of sales revenue allocated to research and development varies considerably by industry; as low as 1/10 of 1 per cent of gross sales may be found in the packing industry, for example, while chemicals and allied products show the highest ratio, frequently 5 per cent or more of gross income (U. S. National Resources Planning Board, *Research—A National Resource*, Vol. 2 [Washington, Dec., 1940], p. 9). A survey conducted in 1940 by the National Research Council found that the median expenditure on research of 203 companies was 2 per cent of gross sales income (*ibid.*, p. 124). A more recent survey conducted in 1947 indicated a median percentage between 1½ and 2 per cent of sales. National Industrial Conference Board, *Business Record*, Vol. 4 (March, 1947), p. 64.

[18] One factor which imposes a maximum on research endeavor is availability of laboratory facilities and trained personnel. The latter shortage always existed and now has been rendered acute by the demands of the rearmament program.

of the times. World War II, with its emphasis on new products, new techniques, and the increased use of substitutes and synthetics, together with the great scientific advances which have been made in recent years, contributed a further strong impetus to research endeavor.

Today total research expenditures by private industry are estimated at 900 million dollars a year. A survey of research expenditures of manufacturing concerns conducted early in 1950 found that 62 per cent of the companies consulted had greater research facilities available than before World War II and that 38 per cent of the firms had expanded research facilities during this period from 50 to 100 per cent.[19]

Although the next few years are likely to witness increasing corporate expenditures on research—particularly if the rate of corporate excess profits tax is increased—an uninterrupted growth of research is improbable. Research expenditures in the past have characteristically reflected the ups and downs of business activity, and a similar co-variation can be expected in the future. For American business as a whole, research expenditures can be represented by a rising trend, the deviations from the trend occurring in response to fluctuations in business conditions,[20] rather than to changing labor costs. While most employers today are planning increased appropriations for research endeavor, such decisions are apparently motivated more by tax policy than wage pressure. Entrepreneurial opinion suggests that if over the cycle there is a positive correlation between wage increases and expenditure upon research, this association is probably attributable to a temporal coincidence of high wages and high profits,[21] rather than to a causal relation between wage levels and research expenditures.

On the whole, there is little empirical evidence to suggest that wage pressure substantially affects the total volume of industrial research expenditures. Over the long run, higher wage costs, as one element in the general competitive situation, have probably contributed to increased interest in research as a means of maintaining and augmenting profits. The sharp upward trend in research expenditures, however, must largely be explained by non-wage considerations, while deviations from this trend are primarily attributable to fluctuations in business conditions.

Even if it could be demonstrated that union wage pressure had stim-

[19] *Mill and Factory* (May, 1950), p. 87.

[20] Not only research expenditures, but also patent issues reflect changing business conditions. From 1894 to 1930 the cycles in patents issued and industrial production tended to move concurrently. See E. Graus, "Inventions and Production," *Rev. Econ. Statistics,* Vol. 25 (Nov., 1943), pp. 221-23.

[21] Industry as a whole spent nearly five times as much on research in 1947 as in 1937. During this period total manufacturing profits before taxes rose in almost the same proportion. R. S. Soule, "Research Economics: Postwar v. Prewar," *Chemical Industries* (Aug., 1949), p. 197.

ulated research expenditures in the past, this would not necessarily forecast an increased rate of discovery in the future; for thus far union pressure has particularly been directed against large corporations which are the very ones most capable of reacting to such pressure by expenditures on research. While unions can be expected to organize an increasing number of small companies in the postwar years, a parallel extension of research endeavor is not of an equal likelihood. Because research is an expensive proposition, the bulk of industrial research in the United States is supported by a comparatively few large companies. Less than 3 per cent of all the concerns engaged in research employ about 50 per cent of the total research personnel.[22] Although there has been a substantial increase in personnel attached to laboratories supported by these large corporations, investigation suggests that the rate at which research is being adopted by new managements has tended to fall off in recent years.[23] The fact that this trend has become evident during a period of rapidly rising wage levels does not augur well for the influence of unions upon the extension of industrial research in the future.

Wage Pressure and the Nature of Research

Union wage pressure may have some effect upon the kind of projects which are supported by given research funds. One might expect, on the basis of *a priori* deductive reasoning, that, *ceteris paribus* the pressure of rising labor costs would tend to produce a shift in emphasis in research from development of new and improved products to discovery of labor-saving methods. The results of inductive investigation, however, suggest that this change in emphasis in industrial research activity has not occurred. On the contrary, *the percentage of corporate research budgets allocated to cost reduction projects appears to be decreasing*. The latter trend was reported by a number of the research executives interviewed by the writer and has also been observed by other investigators. For example, David Weintraub, former director of the Works Progress Administration Studies on Technological Change, has stated: "There is evidence . . . that the emphasis in industrial research has shifted from problems concerned with reducing costs to the development of new products and new applications of old products."[24]

That this trend has become evident during a period of rapidly rising

[22] D. Weintraub and I. Kaplan, *Summary of Findings to Date* (Philadelphia, U. S. Works Progress Administration, National Research Project on Reemployment Opportunities [March, 1938], p. 6).

[23] U. S. National Resources Planning Board, *op. cit.*, p. 185.

[24] D. Weintraub, "Effects of Current and Prospective Technological Developments upon Capital Formation," *Am. Econ. Rev., Supplement*, Vol. 29 (March, 1939), p. 29.

wage rates is highly significant. It is only fair to state, however, that apparent manifestation of this trend toward increased interest in, and expenditure on, product development is subject to certain limitations. In the first place, cost reduction projects in some companies are included under expenditures of the "mechanical and engineering department," rather than in the regular research budget. While the percentage of funds in the regular research budget devoted to cost reduction appears to be decreasing, expenditure for projects of this nature in other departments may be increasing. In the second place, it is probably the rule, rather than the exception, that improved processes which reduce costs also yield improved products. Consequently, it is difficult to separate the two as research objectives and any division made by research directors in their reports admittedly must be somewhat artificial.

Nevertheless, regardless of the factual basis for their statements, it is certainly significant that management *believes* that cost reduction is becoming relatively less important as a constituent of research activity. For this would seem to indicate that the upward impetus given to wage rates by union organization has not materially altered management's attitude toward the nature of research objectives. Of course, the increased interest in augmenting profits through product variation can also be interpreted as a reaction to wage pressure. Wage increases may interest management in product improvement as a means of getting into a higher price bracket and thus passing on part of the higher labor costs to consumers. Moreover, union wage pressure, although it increases labor costs, may, by reason of the form in which it frequently presents itself, actually stimulate management interest in product improvement, while deterring interest in cost reduction. For example, the objective of union policy in certain industries, such as men's clothing and women's hosiery, has been to secure uniformity in labor costs over large sections of the industry. Such a policy, in the words of a vice president of a large hosiery company, "tended to take the element of labor cost out of competition to a great extent, although not completely, as there were certain non-union sections which did not conform to the uniform rates and who had some labor cost advantage."[25] Inventive interest is thus diverted from the problem of reducing labor costs to improving the product; for product improvement becomes the main basis of competition.[26] Because they affect all producers alike and do not place one company at a competitive disadvantage relative to another, union wage adjustments on an industry-wide basis are less likely

[25] From a letter to the writer.

[26] The executive quoted above observes: "It is my opinion that most of the research carried on by individual companies in the hosiery industry has been stimulated by the desire to produce improved hosiery, hosiery innovations, etc., for sales promotional purposes rather than to reduce labor costs."

to stimulate research in cost reduction than are wage increases which proceed on the basis of the individual firm.

However, the principal reasons for the growing interest in product research must be sought along other lines. In the first place, it is important to remember that most research is supported by companies which manufacture nationally known and advertised products. Because they sell in a market which, through advertising, has been persuaded of the supposed superiority of their products, competition by these companies generally emphasizes quality rather than price, and this emphasis on quality colors research activity as well. One research director stated that the merits of a research project in his company—a large can manufacturing concern—were considered in relation to quality, service, and cost reduction, in that order. In one of the largest prepared food sales corporations, cost reduction does not even appear as a category in the research budget; instead the classification of projects adopted is: "service, new products, and improved products and processes." This same company effected a savings of approximately $300,000 a year through perfection of a process to retain artificial flavoring in a nationally known dessert, but according to the president of the company, the saving in cost was considered incidental to the improvement in the product which resulted.

Executives in large companies are keenly interested in price reduction; they realize the importance of keeping their product "competitive," but frequently they view the process of price reduction in a slightly different sequence than is customary with most economists. A common business viewpoint is that production of a better product with a wider sales appeal increases volume which in turn makes possible a reduction in costs and price. Many company executives think in these terms, rather than in a direct sequence from cost reduction to lowered prices. This attitude is attributable to the fact that in some industries "unfair price competition" is frowned upon by businessmen, whereas product competition has business sanction. There is some indication that the focus of monopolistic competition is shifting more and more to competition on the basis of product, rather than price—a trend which is reflected in the increasing percentage of research budgets being expended on development of new and improved products.

Another possible reason for the growing portion of research budgets devoted to product improvement and development is that research in this area may be more profitable than research in cost reduction. While it becomes progressively more difficult to reduce labor costs as a higher degree of automatism in operation is reached, the possibilities of increasing profits through product improvement and variation seem to be unlimited. Of course, the comparative advantage of product im-

provement versus cost reduction will vary firm by firm and industry by industry, depending upon the type of product and mode of production. For many mechanical operations, however, it is true that such a high degree of mechanization has already been achieved—as in the case of carton filling, for example—that it may be both difficult and expensive to discover new more labor-saving methods.[27]

A third—and final—reason for the growing importance of product development and the diminishing importance of cost reduction projects in research budgets may be listed, although it was not mentioned by any of the research executives interviewed by the author. This is the fact that cost-reducing improvements, since they generally involve displacement of labor, produce more friction in industrial relations than do improvements in the quality of the product. This consideration may not be of much importance at present, though unconsciously it probably reinforces the effect of the other circumstances in shaping management's attitude toward research. In the future, however, as unionism matures and its power to resist displacement of labor by machinery grows, this factor will add its weight to the others which have been mentioned in reducing the importance of cost reduction in industrial research budgets.

Thus the nature of the changes which are occurring in the composition of corporate research budgets does not conform to what might be expected to follow from rising wage costs, on the basis of traditional analysis. Application of the Hicksian theory of the "induced invention."[28] for example, would seem to forecast an increasing relative frequency of labor-saving inventions[29] and a stimulated interest in research projects devoted to reduction of labor cost. Actually there is little evidence that this has occurred. Union wage pressure appears to have produced some increase in the total volume of discoveries, but it has not increased the proportion of these discoveries which are concerned with reduction in labor cost. As a matter of fact, if recent trends in research activity are continued, it appears the invention in the future will, to an increasing extent, be geared to product improvement rather than cost reduction. Such a shift in emphasis will tend to lessen the effect of union wage pressure upon the rate of technological discovery.

[27] However, even if, within a given technological era, it does become more difficult to discover means to save labor, most research directors questioned by the writer were of the opinion that over the long run invention will be more, rather than less, labor-saving than in the past.

[28] J. R. Hicks, *op. cit.*, p. 125.

[29] The predominance of the labor-saving invention is explained by Hicks as attributable to the phenomenon of the induced invention. A rise in the price of labor relative to the price of capital would, on the basis of this theory, be expected to increase the predominance of labor-saving inventions in the total volume of new discoveries.

Wage Pressure and the Effective Rate of Discovery

For certain purposes, it is convenient to distinguish the rate at which inventions are developed in the laboratory from the rate at which they are made available to the public. The former may be called the actual rate of discovery; the latter the effective rate of discovery. These two rates are not necessarily equal; the proportion of inventions which will be commercially exploited depends upon the cost-price structure and upon the nature of competition.

Although wage pressure does not have much relation to the actual rate of discovery, rising wage costs may increase the proportion of inventions worth exploiting and thus produce an acceleration in the effective rate of discovery. As has already been indicated in the analysis of the various stages of the research process, an increase in wage rates may be the determining factor in management's decision to make the final research appropriation necessary to bring a new product or process into production. This stimulus is probably of most significance with regard to improved processes where margins and expected sales can be more accurately estimated. However, expectation of rising wage rates in the future makes management particularly anxious to improve its current profit position, so as to be prepared for the higher burden of costs. For this reason, a continuously rising wage level probably stimulates commercial application of new and improved products as well. Moreover, wage increases may act as a detonator in research activity, much the same as they increase the general level of efficiency of an enterprise. Research work may have been going on sporadically for some time on development of a new manufacturing technique, but a sharp increase in labor costs will bring orders from management to speed up experimentation and get into production as rapidly as possible. Thus, wage pressure may increase the effective rate of discovery by shortening the average period of gestation of invention.

From the point of view of national welfare, it is probable that invention spends too long a period in the laboratory. What is needed is a higher effective rate of discovery accompanied by a more orderly process of application of improved products and methods. In a survey of important discoveries, Dr. S. C. Gilfillan found that an average of half a century elapses between the first serious work on an invention to important use from it.[30] Rising labor costs, however, make change more desirable and continuance of old methods costly. Union wage pressure, therefore, by augmenting the advantage of the new over the old, may stimulate management to accelerate research experimentation upon new discoveries and to release them more rapidly to the public.

[30] S. C. Gilfillan, *The Sociology of Invention* (Chicago, Follett Publishing Co., 1935), p. 96.

On the other hand, high labor costs may also retard the effective rate of discovery by increasing the mortality rate of business enterprises. In the absence of unions, inefficient entrepreneurs would enjoy a better chance of survival. Such survival is, of course, socially undesirable if it is bought at the price of substantial wages. On the other hand, it should be recognized that a high rate of business mortality makes for unproductive use of existing patents and probably reduces the effective rate of discovery. Our knowledge is limited concerning the disposition of patent holdings of insolvent firms, but it seems likely that full exploitation of many new ideas is substantially delayed in the process of bankruptcy and reorganization. It is true that a threat to survival provides the maximum incentive to increased efficiency and invention, but survival itself is essential if the full benefits of the pressure are to be reaped. Too rapid a rise in wage rates not only produces short-run unemployment, but also diminishes the flow of the stream of discovery upon which the level of long-run employment depends.

On the whole, it appears doubtful whether unions will make a substantial contribution in the direction of achieving an acceleration in the effective rate of discovery. While it is true that union pressure on costs may shorten the average period of gestation of invention, the growing strength of union organization is likely to be reflected in a multiplication of union rules and regulations which retard the rate of actual introduction of mechanical improvements. These restrictions are concrete and the retardation they impose on technological change is known, whereas, by contrast, the effect of wage pressure upon technological discovery is vague and indirect.[31] Although at the present stage of union development there may still be some small net stimulus forthcoming from wage pressure,[32] in the future, growing union efforts to safeguard the jobs of individual union members and to preserve the *status quo* will probably act as an over-all brake on the pace of technological advancement. It is possible, however, that unions as a consequence of management's grant of an annual improvement factor will be more willing to relax restrictive rules and regulations so as to make possible the technological advance upon which the improvement factor is based.

[31] The existence side-by-side of high wage rates and time-consuming methods in the construction industry has not proved an effective stimulus to technological change, because innovators realize that new techniques would be opposed by the unions. The effect of restrictive union practices must be judged, therefore, not only by the retardation they produce in the rate of introduction of known improvements, but also in the discouragement they afford to potential invention.

[32] This stimulus to the rate of discovery is small compared to what could be accomplished by intelligent revision of tax and patent laws.

LESSONS OF WAR FINANCE

By WOODLIEF THOMAS*

War finance provides economists with a laboratory for testing theories of inflation and its control. The methods adopted to finance war not only have significant effects during the war period but also can have far-reaching consequences long after the war has ended. With two major wars in our generation and another threatening, it behooves us to study the experience of the past and to endeavor to avoid repeating any mistakes we have made.

The National Debt in War and Transition by Henry Murphy[1] furnishes an intelligently analyzed and probably the most comprehensive review of the methods and consequences of war finance that has ever been prepared. No one is better qualified by experience and training to undertake this task than Mr. Murphy. As assistant director of research and statistics in the Treasury Department for more than a decade before and during World War II, he had direct responsibility for research in debt management and was an active participant in the councils that determined policies. As an occasional participant and also a responsible observer, I can attest to the high quality and vigor of Henry Murphy's contributions, particularly because we frequently disagreed.

I

As indicated in the preface, this book endeavors to fill the place of an "official 'administrative' history . . . discussing the background of the policy decisions of the Treasury and the Federal Reserve System in the field of public debt management during the war period and thereafter." It is not intended to be an exposé; it is more nearly an apologia, for the author definitely states and supports his belief "that, on the whole the job of war finance and of postwar financial reconversion was well done." It is with this thesis, in my opinion, that there can be disagreement.

Many of the differences in views between the Treasury and the Federal Reserve are discussed in the book. Mr. Murphy expresses the

* The author is economic adviser to the Board of Governors of the Federal Reserve System. Views expressed are those of the author and should not be considered as representing the views of the Board except to such extent as the Board has published its positions.

[1] McGraw-Hill Book Company (New York, 1950), 295 pages.

view that these differences "were generally on narrower issues than was often supposed outside official circles." It is true that the Treasury and the Federal Reserve agreed as to broad objectives and that most of the differences of opinion related to matters of judgment as to procedures in carrying out these objectives. Many of the specific proposals seemed hardly wide enough apart to be significant. The differences in point of view, however, were not superficial; they were based upon fundamental and significant disagreements of principle and theory. Frequently those concerned with making the decisions were not fully aware of the fundamental significance of their advice and actions.

It is useful to review these differences, as well as those aspects of debt management about which there was substantial agreement, and to appraise the experience critically. If we should embark upon another war, and even in the smaller-scale defense program which we have recently undertaken, it is most important that to the maximum degree possible we avoid the mistakes of the past. Some of the mistakes were seen at the time by observers, while others have become apparent as a result of subsequent developments. The decisions made were generally based upon careful analysis, wide discussion with a large number of people, and the weighing of different points of view. The Treasury could not be criticized for failure to seek advice. Nor should the Treasury necessarily be held to blame for all the decisions that might be called mistakes. The counsellors were frequently divided in their views and in some cases there was general agreement upon policies which on the basis of subsequent events might be considered as mistaken.

This book on the national debt gives in detail the information needed to show those mistakes. The author, however, is rather complacent about them. He concludes that the war borrowing program was "by a wide margin the best handled and most successful which the country has ever seen." His assertion that "the total war and postwar inflation was held to smaller bounds than had been the case in either World War I or the Civil War" is hardly supported by the facts. The concluding sentence that "We should all be well content to let World War II stand forever as the highwater mark in our development of the techniques of war finance" is a questionable conclusion in the light of the facts presented in his book.

II

The principal features of World War II finance have been set forth in many records[2] and are well known. Mr. Murphy's contribution is to

[2] Some of the principal sources are: Abbott, Charles Cortez, *Management of the Federal Debt* (New York, McGraw-Hill, 1946); Anderson, Benjamin M., "Inflation, the Rate of Interest and the Management of the Public Debt," *The Economic Bulletin*, May 27, 1947; Board of Governors of the Federal Reserve System, *Annual Reports*, 1942-1950;

present them in greater detail with a discussion of the various considerations that led to the decisions made. He also gives a useful analysis of government finance during the depression and defense periods. Knowledge of these periods is essential for an understanding of many of the aspects of war finance.

The principal decisions as to war finance were: to tax heavily but not to cover all expenses by taxation; to borrow through voluntary means and not through compulsory savings; to raise needed funds as expeditiously and as cheaply as possible; to endeavor to sell the maximum possible amount of securities to nonbank investors, but to rely upon banks for residual amounts; and, finally, to make use of the Federal Reserve to assure that funds could be raised on the basis of the interest rate pattern and terms adopted.

Chapters on "The War Economy," on "Taxation Versus Borrowing," and on "The Voluntary Way for War Borrowing" in the early part of the book present briefly a rationale of various possible methods of war finance, considerations governing their adoption or rejection, and a résumé of those actually adopted. The relative merits of taxation and borrowing are discussed from the standpoints of fairness, inflation controls, production incentives, and postwar effects. The political, psychological, and economic limits of taxation are also emphasized. There is an enlightening discussion of the inflationary gap and of the rôle of savings. Finally, there is considerable discussion of various proposals for compulsory savings and of the suggested spendings tax.

To cover adequately the subject of wartime taxation would require another book. A comprehensive, critical appraisal of war finance should place more emphasis than Mr. Murphy does upon delays in obtaining additional taxation. The story was consistently one of too little or too late. Measures vigorously opposed one year were belatedly adopted the next. In the meantime, the inflation potential mounted. Adoption of the current withholding of individual income taxes is a striking

Chandler, Lester V., *Inflation in the United States, 1940-1948* (New York, Harper, 1951); C.E.D., *Monetary and Fiscal Policy for Greater Economic Stability* (New York, Committee for Economic Development, 1948); Committee on Public Debt Policy, *Our National Debt* (New York, Harcourt Brace, 1949); Hansen, Alvin H., *Monetary Theory and Fiscal Policy* (New York, McGraw-Hill, 1949); Harris, Seymour E., *The National Debt and the New Economics* (New York, McGraw-Hill, 1947); Secretary of the Treasury, *Annual Report for 1945;* Thomas, Woodlief, and Young, Ralph, "Problems of Postwar Monetary Policy," *Postwar Economic Studies,* Number 8, Board of Governors of the Federal Reserve System, 1947; U. S. Congress, *Monetary, Credit, and Fiscal Policies*—statements submitted to Subcommittee on Monetary, Credit, and Fiscal Policies, Joint Committee on the Economic Report, 81st Congress; U. S. Congress, *Report of the Subcommittee on Monetary, Credit, and Fiscal Policies of the Joint Committee on the Economic Report Pursuant to S. Con. Res. 26,* 81st Congress; Eccles, Marriner S., *Beckoning Frontiers,* Parts VI and VII (New York, Alfred A. Knopf, 1951).

example. This measure and the spendings tax were not pushed earlier because they might interfere with the savings bond campaigns.

Toward the end of this review there is given a further analysis and criticism of some of the underlying theories that seemed to guide Mr. Murphy in his appraisal both of the various possible methods of war finance and of the success of the debt-management procedures and policies actually followed.

III

It is with the borrowing aspects of war finance that this book is most concerned. In this area emphasis was correctly placed upon the necessity in war for finance to be the servant, not the master. It is essential that needed funds always be readily available. What is often lost sight of is that under conditions prevailing at the outbreak of the war in this country, the task of borrowing money was an exceptionally easy one. Wth modern central bank techniques, governments can readily obtain funds in almost any amounts. The more important consideration of war finance is to raise funds in a manner which will minimize inflationary consequences not only during the war but in the years to follow.

In the United States in 1941, it was particularly easy for the Treasury to borrow abundant funds at low rates of interest. The reasons for this grew out of developments in the depression period; they were: (1) the tremendous inflow of gold during the 1930's which had swelled the reserves of the banking system far beyond the needs of the economy, particularly at the depressed levels prevailing; (2) the resulting very low level of interest rates and especially the wide spread between short-term and long-term rates; (3) the gradual adoption by the Federal Reserve of a policy of supporting the government securities market; and (4) the relatively large volume of government securities held by the banks which could through sales to the Federal Reserve readily create additional reserves.

These significant influences, which were all related, formed what has been called the "government's easy money policy." Contrary to a popular view, they had not been "planned that way," but had developed naturally and gradually out of the circumstances of the 1930's. They were largely depression phenomena, but continued to exist during the expansion that occurred in the defense preparation period of 1940 and 1941. Thus we entered the war at the end of 1941 not only with the lowest level of interest rates in our history—a level that had only just been reached—but also with a structure of rates that was characteristic of a highly abnormal depression economy. This situation

conditioned wartime and postwar debt management and to a large extent determined its consequences upon the economy.

IV

One of the first policy decisions made was to borrow for war finance generally on the basis of the structure of interest rates then prevailing. The Federal Reserve entered upon this arrangement, which gradually became a commitment, with some misgivings. The reason for its adoption was the recognition that with almost unlimited borrowing always in prospect, interest rates would tend to rise and that such a prospect would tend to hold back purchases of securities. At the same time, the artificial nature of the existing structure was a cause for worry.

In particular, the Federal Reserve wanted somewhat higher rates at the short end and some of the Federal Reserve officials would also have preferred a little more flexibility in long-term rates before establishing a pattern. Chairman Eccles suggested that, if the long-term rate was to be frozen, long-term bonds sold to nonbank investors should be nonmarketable with redeemability only at a sacrifice in interest return. Subsequent events indicate the wisdom and foresight of this proposal, which was adopted to a limited extent. Mr. Murphy's principal positive suggestion for any future war financing is for greater use of securities of this sort.

The Treasury not only insisted upon the maintenance of very low short-term rates but also during early 1942 wanted the Federal Reserve to assure that banks continue to have a large volume of excess reserves. It soon became evident that, with the persistent credit demands from the government and from private borrowers, such a policy could only lead to unlimited credit expansion and a decline in interest rates close to the zero level that had prevailed for Treasury bills during previous periods of large excess reserves. The decline would have gradually permeated the whole rate structure. Under such a policy the objective of selling the maximum amount of securities to nonbank investors would have been a sham. The eventual establishment by the Federal Reserve of a 3/8 per cent buying rate on Treasury bills in effect provided banks with interest-bearing excess reserves, which were limited, however, by the volume of bills available.

With the rate structure that prevailed, as the Treasury offered increasing amounts of certificates, notes, and bonds, as well as of bills, practically all of the bills, which bore the lowest rates, gradually came into the Federal Reserve portfolio. Eventually it developed that dealers bid for the weekly bill offerings and promptly sold them to the Federal Reserve at the established buying rates. The Federal Reserve repeatedly made suggestions for permitting somewhat higher rates on bills, so

that banks and others would hold them. Some of these suggestions included means for lower rates on Federal Reserve holdings. It should be pointed out that opposition to the adoption of such measures existed within the Federal Reserve as well as in the Treasury. Not until 1947 was a workable *modus operandi* finally adopted.

Gradually each segment of the rate pattern became firmly fixed. Soon after the fixing of ⅜ per cent on three-month bills, certificates began to be issued and the rate shortly settled at ⅞ per cent for one year. Another established peg came to be 2 per cent for bank eligible bonds with a maturity of not more than 10 years. The top limit was the early agreed-upon 2½ per cent for long-term bonds, which was not raised even when the long bonds issued were restricted as to ownership by banks and although the maturities were gradually lengthened.

With this sort of a pegged pattern there was no difficulty in keeping down long-term interest rates. The longer-term higher rate securities were popular. All securities rose in price as they approached the term of lower yielding issues. The shorter issues were sold to the Federal Reserve and longer issues were bought. The new reserve funds thus created provided the basis for multiple expansion in bank purchases of longer securities. This practice, which came to be known as "playing the pattern of rates," tended to bring down long-term interest rates. During the war period, the tendency of rates to decline was retarded by continued new offerings of longer term issues, but the movement became most pronounced in 1945 and 1946.

This was an almost perfect mechanism for promoting unlimited purchases of government securities but not for restricting inflationary credit expansion. The mechanism was made even more effective through the conduct of the war loan drives, combined with temporary elimination of reserve requirements against so-called war-loan deposits at banks. It should be clearly recognized, of course, that maintenance of the pattern of rates, the conduct of the war loan drives, and the exemption of war loan deposits from reserve requirements, while designed to facilitate war finance, were not intended to create such "an engine of inflation" as the combination later came to be called by Mr. Eccles. The results, while feared by some, became evident only with subsequent developments.

Mr. Murphy describes with considerable objectivity the various steps and reasons whereby the pattern of rates became established and also the processes whereby it tended to lower interest rates. He has little to say, however, about the inflationary consequences of these developments; rather he implies that purchases of securities by the Federal Reserve and commercial banks would have been just as large with any other structure of rates.

V

The war loan drives, which were designed to further the objective of raising funds from nonbank investors, came to have consequences which cast doubt upon their effectiveness in accomplishing that objective. This controversy is one in which the different viewpoints were and no doubt will continue to be based upon reasonable variations of judgment depending partly on emphasis given to particular objectives. It is clear that, owing to the profits that could be obtained from playing the pattern of rates, many of the purchases of securities in the later drives were made possible by sales to banks of securities purchased in previous drives. Such shifts, which were known as "free riding," were highly profitable, and the possibility of profits induced some of the buying of securities. Free riding or "quota riding" also resulted from efforts to build up impressive sales results in local war-loan campaigns.

Thus it can be demonstrated that the war-loan drives, although ostensibly drawing in large purchases of securities by nonbank investors, actually brought about heavy sales of securities to banks. The question that remains unsettled is whether in the final analysis the drives resulted in the purchase and retension by nonbank investors of more securities than would otherwise have been obtained. Murphy believes that they did, but there can be no definite answer to this question, because the alternative procedure was never tried. The Federal Reserve persistently recommended procedures designed to restrict nonbank purchases of the type that resulted in large resales to banks. Such proposals were often opposed by the sales organizations for the war-loan drives, but some measures of the sort were attempted.

One important contribution of Murphy's book is the detailed description of the various war loans—the setting up of the sales organization, the various securities included in each loan, the establishment of quotas, the changes in selling methods, the restrictions designed to limit "free riding" and direct or indirect bank participation in the loans, and the final results of each loan. The recital of facts shows how sales enthusiasm and the desire for large quotas generally prevailed over what Murphy calls the aim of "purity" in avoiding the leakage of securities to commercial banks.

The discussion of "free riding" gives inadequate emphasis to the influence of the pattern of rates in encouraging such a practice. In one place (page 178), Murphy expresses concurrence with the opinion of the sales organization that a substantially larger amount of securities remained in the hands of nonbank investors as a result of the supersaturation than would have been the case if sales had been limited. Elsewhere (page 172) he expresses the view that, if corporate over-

subscriptions, made possible by leakages to banks, could have been reduced, more intensive canvassing of individual investors would have been necessary and "probably, a larger portion of all the funds raised would have come from nonbank investors."

VI

Ultimate appraisal of the success of war finance cannot be reached alone on the basis of wartime results. Postwar consequences are even more important. In war direct controls of various sorts and extra heavy taxation, as well as patriotic appeals and the willingness of potential buyers to await better selections, can be relied upon to help hold back inflation. After the war, when increased supplies of goods become available, for which accumulated wartime savings may be used, and when market forces can again be permitted to operate, the success of war finance is subjected to its real test. Judged on the basis of this test, the methods of financing World War II and postwar monetary and debt management policies should be viewed with skepticism as a guide for the future. The inflation that resulted was serious. The question remains as to what different policies would have reduced the degree of inflation.

With the termination of heavy Treasury borrowing but continuation of the policy of maintaining the pattern of rates, the principal limitation on a downward adjustment of long-term interest rates was removed. There developed a bull market in government securities, which Murphy says was due almost entirely to psychological causes, ignoring the more obvious cause. It was then that more serious differences of opinion developed between the Treasury and the Federal Reserve. The latter wished to take action which would discourage sales of short-term securities to the Federal Reserve to obtain funds to purchase higher-yielding securities. Even though action of this sort was essential not only to limit creation of bank reserves but also at first in order to prevent a further decline in long-term rates, the Treasury wanted to avoid any rise in interest rates.

Chairman Eccles proposed, as a means of accomplishing the Federal Reserve objective of restraining monetary expansion without causing a rise in interest rates, a supplementary reserve requirement for banks that could be held in short-term government securities. This proposal was not supported by the Treasury, nor by all the Reserve Banks, and was vigorously opposed by bankers. Murphy does not even mention the proposal.

Resumption of private demands for long-term, as well as for short-term borrowing, and a program of debt retirement by the Treasury,

which reduced bank holdings of short-term securities, shortly curtailed the demand for long-term Treasury bonds. Pressures on the short-term market, however, continued and the Federal Reserve was steadily called upon to purchase short-term securities in order to supply funds to expand private credits.

Murphy expresses the view that the 1946 Treasury program of retiring debt from previously accumulated cash balances was entirely neutral in its effect. Actually it had some deflationary effect to the extent that the Federal Reserve holdings were retired, because banks were thereby deprived of reserves and had to obtain funds by selling securities. Later when budgetary surpluses were used to retire securities held by the Federal Reserve, the deflationary effect was even more pronounced and is acknowledged by Murphy. This is a matter on which there has been considerable misunderstanding, growing out of the habit of measuring results only by net changes in holdings of securities by different groups of lenders without considering the intervening steps. When banks find it necessary to sell securities, some degree of restraint is exerted upon them, even though the Federal Reserve buys the securities at a fixed rate. The restraint, of course, is greater if rates are permitted to rise under such selling pressures.

Finally, bginning in the summer of 1947, short-term interest rates were permitted to rise somewhat in response to market pressures. The artificially wide spread in the structure of rates narrowed considerably. Federal Reserve holdings of Treasury bills declined, and holdings by commercial banks and by nonbank investors increased. Murphy mentions the changes in rates but does not point out the effects in obtaining a better distribution of the short-term debt among investors and in reducing creation of bank reserves through playing the pattern of rates.

Selling pressures then shifted from short-term securities to long-term bonds, particularly the restricted bonds. Late in 1947 selling of bonds accelerated. The Federal Reserve made heavy purchases even at substantial premiums in order to cushion the decline in prices and discourage speculative selling. Soon the Federal Reserve lowered its support prices to little above par for the longest issues and bought freely at the pattern of prices set. Altogether within about a year Federal Reserve purchases of bonds totalled about 10 billion dollars. Murphy describes these developments but does not give an appraisal of basic issues involved in the policy of pegging bond prices by a process that creates additional bank reserves in an inflationary period.

The chronological description of war finance ends with developments in the middle of 1949 and the change in Federal Reserve policy from endeavoring to resist inflationary tendencies. The conclusion is that this

change in policy should have occurred earlier because of the developing recession. Subsequent events, not discussed in the book, indicated that the so-called recession was only a minor and probably inadequate readjustment and an early re-reversal of policy was necessary.

VII

A rationale, if not *the* rationale, governing debt management policies followed during the war is presented by Murphy. It is doubtful whether the theories underlying Murphy's appraisals have been supported by subsequent events or should be accepted as the basic principles of war finance to guide us in the future. Expressed in simple terms they are that change in the quantity of money is not an important consideration in war finance and that interest rates should not be permitted to rise. A corollary view is that the forms in which liquid assets are held are not of particular importance. Finally, the fear of a postwar recession and the desire to have an accumulated fund of buying power to cushion such a decline was a guiding motive.

Analysis of the "inflationary gap" and of the "paradox of savings," presented in the book, is a useful reminder of some of the complexities of determining the possible inflationary consequences of war finance. It is shown that substantial savings are inevitable when there is a large government deficit and that the statistical quantity of saving is not a measure of the degree of inflation or of deflation. The effect depends on the uses that are made of the savings. The practical rule is that "everything possible should be done to induce people and business firms to save. The more they try to save, the lower will be prices. . . ." With respect to the application of this rule, however, Murphy belittles the effectiveness of the most readily available procedure. His basic philosophy appears in the following statement (p. 72):

> It should be emphasized that it is the stimulation of savings and not the procurement of the investment of these savings in government securities which is essential. If the money is saved, it is only a matter of the niceties of finance that it should be invested directly in government securities by the saver. If he does not so invest it, this will be done for him by the banks or other institutional investors whose liabilities he is holding. . . . But if a wartime borrowing program is not effective in stimulating saving, it is of no avail that it succeeds in selling enough securities to finance the deficit. Spending will continue in excess of the available supply of goods and services, and prices will rise in a never-ending spiral. This is a difficult concept—the most difficult in war finance.

While these criteria represent the "ultimate" goal, they "are too complex for a sales organization to understand." It was necessary, there-

fore, to establish as a "proximate" goal of success the more measurable result of the volume of sales to nonbank investors. Although Murphy contends that this was not the "real" objective, he does admit that it had considerable validity because "funds invested in government securities are less likely to be spent readily than those saved in the form of currency or bank deposits." Greater emphasis upon this proximate goal, rather than less, in debt management policies would probably have brought us nearer to attainment of the ultimate goal than was actually reached.

Important considerations either not mentioned or not given adequate weight by Murphy are: (1) increases in bank deposits require the creation of bank reserves, which continue available to banks even if the deposits are later extinguished by debt repayment; (2) increased savings—the "real" objective—can be induced if securities offered are sufficiently attractive; (3) devices can be employed to discourage dissaving, once funds are invested in government securities, particularly if they have to undergo the test of the market; (4) finally, the test of effectiveness should be measured not so much by wartime as by postwar experience.

The philosophy that the form of savings did not matter also partly explains the view that the level of interest rates did not matter very much. In the discussion of fitting the securities to the needs of investor (page 266) there is some recognition that rates of interest as well as maturities should vary. In order to provide rates high enough to suit the needs of some investors and still not upset the established pattern, longer maturities were offered. The sensitivity of the prices of these long-term securities to interest rate changes, Murphy correctly points out, "greatly increased the difficulty of making any adjustments in long-term interest rates in the post-war period."

Murphy's basic view, however, is expressed as follows: "it is unlikely that an increase in interest rates would have been helpful in furthering the ultimate objective of reducing total spending." He admits that for the postwar period it was too early to say whether the wartime long-term rate of interest was correct. But his basic view during the war and after was that long-term rates should be low and should not be permitted to rise.

One of the important and persistent considerations determining wartime debt-management policies that in the light of hindsight was mistaken was the fear of postwar depression. It was thought that an accumulated pool of buying power could be prevented from causing inflation during the war by direct controls—the example of Nazi Germany was cited in support of this view—and would be useful in preventing depression after abnormal wartime demands ceased. It is now

clear, and should have been during the war, that these fears were unfounded. All of the discussion of compulsory or voluntary saving as a means of providing a postwar backlog of buying power was a misdirection of emphasis. The pool of buying power turned out to be obviously excessive and was responsible for an avoidable degree of postwar inflation.

VIII

In view of the basic principles that seem to guide his judgments, Murphy's appraisal of the success of the war borrowing program could not be particularly critical. Because the proportion of United States securities was increased from 24 per cent to 43 per cent of total liquid assets held by nonbank investors, he concludes that the sales organization deserves credit for "a considerable degree of success toward achievement of the proximate goal of the war borrowing program—*i.e.*, the sale of securities to nonbank investors." He lists certain other important factors that contributed to this achievement. Question can be raised as to whether, in view of the tremendous increase in total liquid assets, there might have been ways of selling more securities to nonbank investors and, more importantly, of having them held more firmly in the postwar period.

Appraisal of the attainment of the "ultimate" goal, namely to reduce total spending and thus to help in holding down prices is highly equivocal. In effect, Murphy seems to say that to the extent that the war borrowing program did this, it made a contribution to the wartime stabilization program and to reduction of postwar inflationary pressures.

An involved analysis of yearly increases in money and liquid assets *as percentages of gross national product*, compared with percentage increases in prices, is presented, apparently to support a conclusion that short-run changes in money have no bearing on price changes. Another set of comparisons of actual figures is given to indicate that in the long run money and liquid assets do seem to have a bearing on price changes. On the basis of this comparison and after weighing various qualifications, the conclusion is reached that "the inflation potential remaining from the war-time creation of money and liquid assets had probably been absorbed by the end of 1948."

This conclusion, which appears frequently in writings, is based upon comparisons with the 1930's, a period of exceptionally low monetary velocity, or upon adjustments for long-term trends in velocity computed from dubious figures for early years and greatly influenced by the 1930's and 1940's. Experience of the 1920's, particularly 1928 and 1929, indicates what can happen to turnover of money when specula-

tion is rampant. The influence of the tremendous volume of outstanding government securities will tend to make possible greatly increased turnover of money. This is a factor that needs to be given more consideration in monetary analyses.

In considering ways in which a better job of war finance might have been done, Murphy's conclusions are not radical or particularly impressive. In retrospect, somewhat greater resort to taxation would have been feasible, but it "would not have produced miracles." The importance of prompter increases is not mentioned. The author sees no difference in principle between taxation and compulsory borrowing; he gives inadequate consideration to the difficult postwar problem caused by having such a large volume of liquid assets outstanding. In the light of our recent experience with the results of borrowing, all of the wartime discussion of compulsory saving seems futile. There has been no occasion since the war when a release of compulsory savings would have been appropriate. Nevertheless, it is likely that such debts would long ago have been made redeemable, thus adding to postwar inflationary pressures which even so were much too great.

Murphy's other principal conclusions are of a negative nature. He rejects proposals for the offering of irredeemable securities for sale, on the reasonable ground that they would not have been purchased in sufficient amounts to accomplish the desired purpose. He would favor, on the other hand, more extensive use of nonmarketable securities redeemable before maturity, presumably at some sacrifice in yield. These would have the advantage of placing some penalty on redemption without all the disadvantages of market price fluctuations as a means of accomplishing that purpose. This is a proposal which needs much more consideration of all factors than Murphy gave it.

Finally, he rejects suggestions that a general increase in interest rates would have contributed to the success of war finance in attaining the ultimate objective of reducing spending in the war and postwar periods. He admits that higher interest rates "might have been helpful in accomplishing the proximate objective," namely the sale of more securities to nonbank investors, who would have held smaller cash balances. He also admits that low rates might have encouraged excessive capital formation in the postwar period, but capital formation was needed at that time. This is a view that needs qualitative analysis. He fears that if rates had been permitted to rise, they might have continued too high when lower rates again became desirable. It appears that because low rates are beneficial at times, higher rates should never be permitted to occur.

This conclusion leads to the inevitable result that, when borrowing demands are in excess of available savings, interest rates should not

be permitted to rise, but new money should be created. This seems to be a complete negation of any sort of monetary policy aimed at the maintenance of a reasonable degree of stability. Inflation should be permitted until the bubble bursts. This theory should be put in the same class with an earlier held theory that depression should be permitted to continue until a state of equilibrium is reached.

Events since the book was published have resulted both in a higher general level of interest rates and in a narrowing of the margin between long-term and short-term rates. In view of this development, one may expect that it will be possible to avoid another attempt to finance a war with a structure of interest rates that can exist only in depression or by unlimited monetary creation. With experiences of the past as a guide, any attempt to do so would no doubt meet with considerably less success in avoiding inflation than was the case during World War II. Interest rates could be held down to such levels and inflation avoided only through the adoption of much more restrictive measures with respect to taxation, compulsory lending by individuals and institutions, and bank reserve requirements than are suggested by Murphy in this book.

In any period of war finance and, in view of the large and widely held public debt, probably also in times of peace, varying degrees of Federal Reserve support will be needed in the government securities market. The objective of economic policy should be to adopt fiscal, debt-management and other measures which will reduce the need for bond-market support in periods of expansion rather than to rely upon such support to make the task of debt management easy.

INTERNATIONAL DISPARITIES IN CONSUMPTION LEVELS*

By M. K. BENNETT†

"Make No Comparisons" was the ninth of Twelve Good Rules for Servants long ago laid down by King Charles of England. It has always been a rule widely observed in the breach. Governments perhaps cast a side glance at it when, in comparisons of nations, the word "underdeveloped" by common consent displaced the word "backward." Comparison nevertheless lay behind the use of either word, as it lies behind the commitment of the United States to extend aid and counsel to underdeveloped countries—some of them, at least—under its foreign assistance programs.

I propose here to attempt—let me stress the word "attempt"—to compare nations with respect to relative consumption levels, limiting the inquiry to 31 nations and to a period shortly before World War II, typically 1934-38. The nations, including some politically dependent groups, comprise all countries of the world, 28 in number, which as of the end of 1935 had populations of 10 million or more,[1] plus three smaller ones[2] chosen to widen the geographical range. The full list appears in Chart 1. The selection is nonpolitical. The populations of these 31 nations made up over 85 per cent of the estimated world total in 1935.

I

The attempt is made here to array or rank these countries with respect to their consumption levels, not to measure degree of difference. This is not the occasion to sharpen definitions of such terms as "consumption level," "level of living," "level of real wages," "level of real income," "stage of economic development," and "level of economic well-being." Some common core of meaning in these words appears to justify the statement that improvement or enlargement or enhance-

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† The author is executive director of the Food Research Institute, Stanford University.

[1] As estimated in League of Nations, Economic Intelligence Service, *Statistical Year-Book . . . 1936/37,* 1937. II. A. 7 (Geneva, 1937), pp. 13-21. The list of countries appears in the charts and appendix tables below.

[2] Cuba, the Union of South Africa, and Australia.

ment of any one of them in so-called underdeveloped countries is an objective of the foreign economic policy of the United States. Yet it seems worth while here to observe again, as J. S. Davis pointed out in his presidential address to the American Economic Association six years ago,[3] that "level of living" comprehends more than "consumption level," and raising it is a superior aim of public policy; that a group with a given "consumption level," which is something experienced, may have a different "consumption standard," which is something desired but not necessarily experienced; and that a group may actually experience a given "level of living" but may aspire to a "standard of living" which is higher. In the matter of international comparison, his important differentiation between "consumption level" and "level of living" perhaps cannot be followed unfailingly. But it is possible to avoid confusing "consumption level" with "consumption standard," and particularly with the term "standard of living," which so rarely is accorded the specific meaning that it ought to have.

I shall endeavor here to cling to the concept of "consumption level" as Davis defined it: "a sort of aggregate of the food, fuel, and other nondurable goods used up, the services of houses, automobiles, clothing, and other durable and semidurable goods utilized, and the services of human beings used, by an individual or group, in a given period of time."[4] Enhancement of national consumption level so construed is today widely accepted as an object of national policy, although that may not have been true two centuries ago, it may not be true universally today, and it might well be qualified as enhancement accomplished without draft on capital assets.

II

Nations, like families, consume food, beverages, tobacco, clothing and items of adornment, cosmetics, fuel, housing and its many appurtenances, transport and communication, books and magazines and newspapers, instruction both secular and religious, medicines and medical ministrations, and so on. There are a good many ways of classifying the goods and services consumed or utilized (a distinction between those words seems unnecessary here) by a nation in a given period of time. I shall make use of the rubrics food and tobacco; medical and sanitary services; housing including fuel, together with clothing; education and recreation; and transport and communication. No outstandingly important aspect of national consumption is omitted in such a classification. Whether or not the goods and services are

[3] "Standards and Content of Living," *Am. Econ. Rev.*, Vol. XXV, No. 1 (March, 1945), pp. 1-15.

[4] *Ibid.*, pp. 3-4.

brought to consumers by individual effort or by action of government is a matter of indifference in the problem of ascertaining relative national status with respect to consumption level.

Some categories of services rendered by durable goods and by persons ought not to be regarded as components of national consumption levels. Armaments and the armed forces constitute the outstanding example, police forces and equipment possibly a less conspicuous one. There would be a consumption level in a slave state heavily burdened with secret police and armed to the teeth. But the very concept of consumption level would be violated if a free state mildly policed and with minimum armament were to be appraised as having a lower consumption level than the slave state merely because the slave state was the more heavily armed and policed. Violence would likewise be done to the concept of consumption level to say of any nation that an augmentation of consumption of military and police services in itself would elevate the national consumption level.

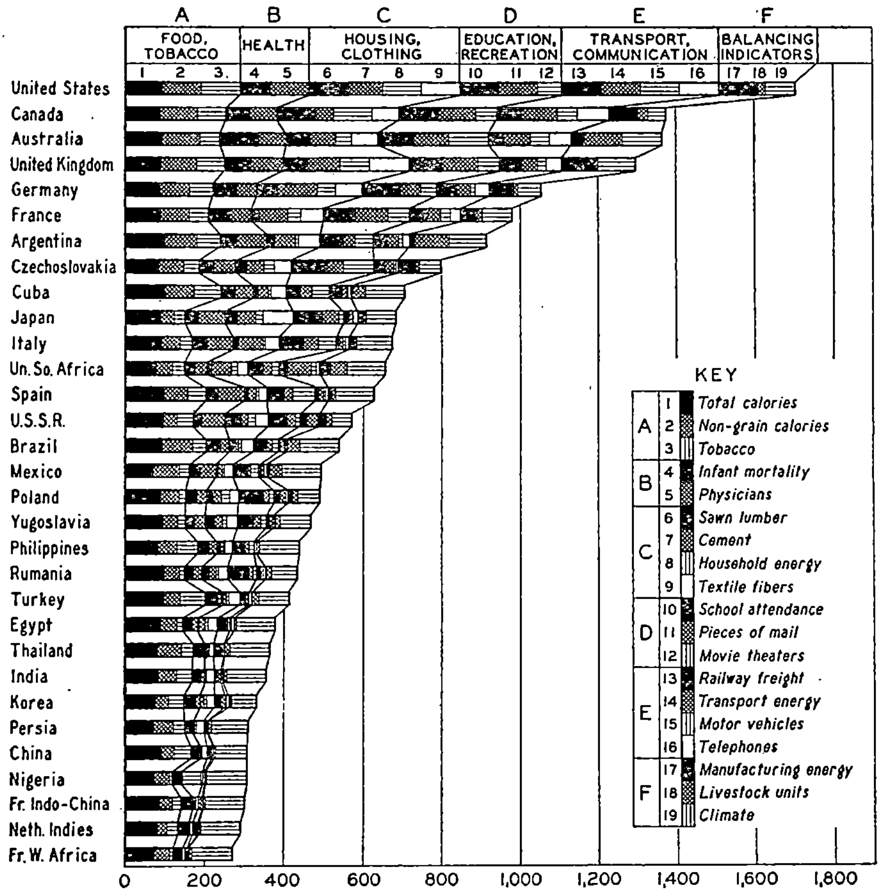
Taking pains to exclude national differences in the quantum and quality of services flowing from armaments and armed forces, how shall one approach the problem of determining the relative prewar status of nations with respect to consumption level?

For economists, perhaps, the first thought might well be to consult available statistics somehow promising to express consumption level in monetary terms—in particular, perhaps, that category of gross national product which is called "personal consumption expenditure," reduced to a per capita basis and converted from expression in national currencies to expression in some single currency or some common denominator such as Colin Clark's "international unit."[5] A little reflection will suggest, however, that estimation of gross national product or personal consumption expenditure is an unknown art in some countries and far from a well-understood and established procedure in others, so that comparability of basic data will be in question where they exist. There will be difficulties, too, in the matter of conversion to a common currency, at least in the not uncommon presence of controlled foreign-exchange rates. Comparability may be jeopardized because price differentials are so diverse from one country to another, and because economies of subsistence type are not easy to compare with the commercialized ones. Personal consumption expenditures would cover poorly such services as accrue to consumers from semidurable goods and durable goods and structures. Somewhat the same points could be made with reference to estimates of national income, or of national wage rates.

[5] *The Conditions of Economic Progress* (London, 1940), p. 39.

The point in question is basically the probable undependability of monetary series, such as are available, as indicators of differences in national consumption levels. It suffices at the moment to say that there seems to be reason enough to search in other directions, among sta-

CHART 1.—NONMONETARY INDICATORS OF RELATIVE NATIONAL CONSUMPTION LEVELS, 31 COUNTRIES, TYPICALLY 1934-38*



* Data from Table II, page 647.

tistical series strictly nonmonetary in character, for indicators of relative national consumption levels in the prewar period, typically 1934-38. Some international comparisons of money income per capita will be presented later. At this point let me indicate the general outcome of an effort to arrange 31 countries of the world in order of rank with respect to consumption level, as in Chart 1, and comment upon the method used to construct such an array.

III

It is possible to find a substantial number of potential nonmonetary indicators of relative national consumption levels, or of some segment of national consumption levels. When in 1937 I undertook to make an international comparison of what I miscalled relative national "standards of living," in a group of European countries and the United States,[6] I used 14 nonmonetary indicators. Of these I now regard only six as reasonably appropriate to the task in hand either then or now. When early in 1950 the United States Department of State issued its brochure called *Point Four* . . .,[7] designed to "explain the nature, purpose, scope, and operating arrangements for the proposed Point Four Program and its relation to the United Nations program,"[8] it arrayed 53 countries not only as to per capita national income in 1939, expressed in dollars, but as to 18 nonmonetary indicators of relative status, though not expressly of status of consumption level. Twelve of these 18 nonmonetary indicators I regard as inappropriate to my effort, for reasons I cannot explain in the space available.

Not only must one avoid monetary indicators which involve the flow of services from armaments and the armed forces. Potential indicators which may cover a good deal of investment in other durable goods or structures should also be excluded; for example, I would reject a series showing consumption of steel per capita. Indicators of relative national consumption of peripheral and minor items like caviar or smoked turkey could serve no useful purpose; one ought to choose indicators representing actual or potential consumer outlay constituting more than an insignificant fraction of national expenditure budgets, or of "use budgets" in economies wherein consumers achieve most of their consumption through their own labor without exchange. In the field of transportation, there is particular need to avoid series in which the relative status of nations rests heavily on the spatial dispersion of the populations within the national territories. The facts that Canada and Australia had respectively only 9 and 12 miles of railway per 1,000 square miles of territory cannot be taken as indicating that their populations used smaller services of railways than did the populations of France and Germany, where railway mileage per 1,000 square miles was respectively 189 and 253 miles. Why lower the rating of a country because much of its area is tundra, swamp, or desert?

For these and other reasons, notably including overnumerous gaps in data, I have rejected, after compilation, such series as crude death

[6] "On Measurement of Relative National Standards of Living," *Quart. Jour. Econ.*, Vol LI (Feb., 1937), pp. 317-35.

[7] Publication 3719, Economic Cooperation Series 24, released January, 1950.

[8] *Ibid.*, p. iii.

rates, tuberculosis death rates, birth rates, and expectation of life at birth; railway mileage, railway locomotives, roads, and telegraph-wire mileage, each expressed both per 1,000 square miles and per 1,000 of population; ton-miles of freight carried on railways per 1,000 of population; percentage of population illiterate; number of elementary schoolteachers per 1,000 of population; consumption of food fat and of animal protein per person per day; and even a commonly accredited indicator, total food calories consumed per capita per day.

The reasons for rejecting data on national consumption of total food calories consumed per capita per day deserve emphasis, because it is mainly from those estimates that conclusions are drawn such as Lord Boyd-Orr's: "A lifetime of malnutrition and actual hunger is the lot of at least two thirds of mankind."[9] Note the word "hunger," which must mean deficiency of food calories if it means anything. In the absence of estimates of national calorie consumption per head per day—an exceedingly complicated problem of estimation—and of per capita calorie "requirements," solidly based, I venture to say that Boyd-Orr could have found no good basis for making so sweeping a statement. People appear to be unduly impressed when faced with figures indicating a consumption of only 1,900 calories per head per day in 1934-38 in French Indo-China and in the Philippines, whereas in the United States and Canada it was estimated as about 3,100 calories—over 60 per cent higher. This relationship is commonly taken as credible evidence that the populations of French Indo-China and the Philippines must have been hungry, must have had a very low consumption level with reference to quantity of food.

The conclusion does not follow from the given data. It does not follow when, as is certain, the populations of the two Oriental countries consist in much larger proportions of babies and very young children, when normal adults weigh about 30 per cent less than the adults of some Occidental populations, and when the Oriental populations live in decidedly warmer climates. It does not follow if, as seems more probable than improbable, the Oriental populations are physically the less active and waste less of the food estimated to be available at retail level—the basis on which these data on food calories per head per day are estimated. When one considers such facts and probabilities, he can reconcile, for example, a calorie-consumption estimate for Thailand in 1934-38 of 1,756 calories, put out by the Food and Agriculture Organization of the United Nations in 1948,[10] with the statement, "There is no problem of hunger [in Thailand]," put out by the United

[9] "The Food Problem," *Scientific American,* Vol. CLXXXIII (Aug., 1950), p. 11.

[10] *The State of Food and Agriculture 1948* . . . (Washington, D.C., September, 1948), p. 49.

States Department of State in 1950.[11] In subsequent use of food-calorie statistics, I employ for international comparison data recalculated to represent consumption of calories at retail level per 100 pounds of humanity per day. The differences between nations shown by this series are much smaller than the differences indicated by data on calories per head per day. Although these differences may sometimes point to genuine shortage of food calories, some of the indicated differences may reflect nothing more than differences in environmental temperature, physical activity, and wastefulness of food, to say nothing of pure errors of estimate; they do not point conclusively to differences in prevalence of hunger.

The nonmonetary statistical series eventually deemed more or less useful as indicators of relative national consumption levels are then as follows: with respect to food and tobacco, (1) total calories at retail level consumed per 100 pounds of humanity per day, (2) proportion of total calories derived from foodstuffs other than those generally cheapest per 1,000 calories, namely grains and potatoes, and (3) consumption of tobacco per capita; with respect to medical and sanitary services, (4) reciprocals of infant-mortality rates, and (5) physicians per 1,000 of population; with respect to housing, fuel, and clothing, (6) consumption of sawn lumber per 1,000 of population, (7) consumption of cement per 1,000 of population, (8) utilization per capita of inanimate energy in households and other nonindustrial buildings, and (9) consumption per capita of textile fibers (cotton, wool, and rayon); with respect to education and recreation, (10) percentage of school-age population attending school, (11) pieces of mail circulated per capita, and (12) number of moving-picture theaters per 1,000 of population; and with respect to transport and communication, (13) weight per capita of freight carried by rail, (14) utilization per capita of inanimate energy by railways and inland waterways, (15) motor vehicles—trucks, buses, automobiles, motorcycles—per 1,000 of population, and (16) number of telephones per 1,000 of population.

The intention in selecting these 16 indicators was somehow to get at what Davis called "a sort of aggregate" of goods and services used by national populations in a given period of time. It will be apparent that, while some of the indicators pertain as they should to a flow of items into consumption in the period specified, other indicators pertain to the stock of items from which services are assumed to flow. In some aspects of consumption, one is forced to judge the flow from the stock, there being no statistical evidence of the flow. Perhaps no single indicator is as accurate as one could wish; and I have had to make my own estimates for some indicators for some countries. The intention was also

[11] Office of Public Affairs, *Thailand: Its People and Economy* (Publication 3958, Far

to provide as wide a coverage as available data permitted of major segments of the consumption level. How successful this effort has been is questionable. There is reason to feel particularly dissatisfied with indicators of relative national status of housing. Series on utilization of cement and of sawn lumber, even when supplemented by estimated per capita consumption of inanimate energy in households, seem insufficient to the purpose. In general, also, the method takes no account of differences in quality of goods and services utilized. In the whole procedure, one is necessarily dealing with rough approximations.

In addition to the 16 indicators pertinent to the several main segments of consumption, I have selected three which I call "balancing" indicators. The first and second of these "balancing" indicators have to do with per capita utilization of inanimate energy in manufacturing establishments, and with livestock units[12] per 1,000 of population. One purpose in including these is to assure a fairer relative rating to countries whose economies are either heavily pastoral-agricultural or heavily industrial. One does not want to penalize, so to speak, either city populations or country populations. Another purpose of including these indicators is to permit expression to be given, among countries where there is practically no manufacturing, to advantages in consumption accruing to those which have the larger livestock populations. The third of these "balancing" indicators pertains to climate. It can be said that peoples living in relatively warm climates have a natural advantage over those living in cold climates in the fields especially of fuel, housing, and clothing, and to some extent of food. Accordingly, although doing so may blur the distinction between consumption level and level of living, I include an indicator which crudely expresses the relative climatic advantage of the warmer countries by assigning a higher ranking to a country that has 365 days a year of temperatures above 41° Fahrenheit than to one which has fewer such days.

Of course there is a question about how to make "a sort of aggregate" of these 19 indicators of relative consumption level. The basic problem is whether or not to assign weights to the several indicators so as to allow for probable differences in importance. I know of no basis for assigning weights. Accordingly, regarding each of the first 16 series as an observation of national differences in one of the major aspects of consumption level, and the other three indictors as corrections of the first 16, I have expressed the basic data as relatives, taking the highest national figure as 100. With respect to any single indicator, a given nation can then score 100 points but no more. With 19 indicators, the maximum score of any nation is 1,900 points.

[12] "Livestock" means horses, mules, cattle, buffaloes, swine, sheep, and goats. Chiefly on the basis of relative value per head in the United States and Canada, one head of cattle or buffalo is taken as 1 animal unit, a pig as .4 unit, a sheep or a goat as .2 unit, a horse or

IV

According to the chart, the United States led the 31 nations here considered in total score, yet failed to score the maximum. One or another country scored higher than the United States with reference to calories per 100 pounds of humanity per day, infant-mortality rate, consumption of cement, consumption of inanimate energy in households, consumption of textile fibers, percentage of school-age population attending school, moving-picture theaters per 1,000 of population, livestock per 1,000 of population, and climatic environment. Nevertheless, the general position of the United States was markedly high. The nearest competitor, Canada, scored only about four-fifths as many points; and the lowest-ranking nation, French West Africa, only about one-sixth as many. The gradient from highest scorer downward was initially steep and thereafter more gradual. Only six countries—Canada, Australia, the United Kingdom, Germany, France, and Argentina—scored more than half as many points as the United States. There were 13 countries which scored from a fourth to a half as many points as the United States, and 11 countries which scored less than a fourth as many.

The summation of scores in Chart 1, at the right, purports to indicate approximately the relative rank of the nations considered with respect to national consumption level. I am aware of the statistical impropriety of adding nonadditive series, and I do not wish to imply that precise numerical expression is given to degree of difference in consumption level between any two countries. If French West Africa scored 269 points by the method used and the United States 1,707 points, it is nevertheless not properly to be concluded that the consumption level of 1934-38 was 6-7 times as high in the United States as in French West Africa.

But have we here even what is sought, a trustworthy ranking of the several nations with respect to consumption level? First, of course, comes the question whether the array is according to consumption level, or according to something else. On this question I can say little more than that effort was made to select only such indicators as pertained to consumption level rather than to stage of economic development or to level of living (except as it includes consumption level and except as inclusion of climate may blur the distinction).

The second question is, how dependable are the scores as indicators of relative rank—in consumption level if it be granted that consumption level is in fact being considered. Supports of reliability lie in the facts that the indicators taken together spread over the dominant aspects of consumption, and that the number of indicators is rather

large. One could have more faith in the outcome if it were possible to find a secure basis for assigning weights to the several indicators. And yet fairly severe weightings, as will appear, have only minor effects upon the ranking of the 31 countries.

Obviously, as Chart 1 shows, there is a larger contrast between nations with respect to some indicators than with respect to others. One would expect this, for a population can survive without telephones, moving-picture theaters, or schools, even without any mechanical transport; but it cannot survive without food calories, without some foodstuffs other than grain and potatoes, without infant-mortality rates such that considerable numbers of babies live more than a year. A nation in the lowest stage of culture would be bound to score points on some of the indicators—the above, and climate as well—but not necessarily on others. If we ignore the balancing indicator of climate, the empirical evidence points toward the smallest disparities between nations in calories consumed per 100 pounds of humanity per day, percentage of calories from foods other than grains and potatoes, tobacco consumption, infant-mortality rates, consumption of textile fibers, and, though less markedly, freight carried by rail, and livestock.

Again, it is only to be expected that one national group may express a preference, whether through the markets or through governmental decision nearly independent of popular decision, to stress educational or medical service, let us say, as against transport and communication; another national group might behave in the opposite way. It is interesting to see that Japan scored more points with reference to school attendance and pieces of mail circulated than did Argentina, whereas with reference to indicators of food and tobacco consumption, the position was reversed. No doubt American decisions under foreign assistance programs will give recognition to possible preferences of underdeveloped areas—some to elevate their consumption level in one direction, some in other directions.

One rather striking oddity appears among the countries ranking lowest according to Chart 1. The ranking of Nigeria as 28th among the 31 countries was determined heavily by the relatively high score in consumption of energy chiefly for household uses. This is not to be explained by exceptional need to heat houses, or to cook, or to supply power for electric refrigerators, vacuum cleaners, or electric lights. It appears simply to be that Nigerians burned a great deal of fuel wood in large fires, which are ceremonial or traditional and supposedly helped to keep lions away. This aspect of consumption was not found elsewhere among the 31 countries here considered, but was apparently common enough in some other parts of Africa. Except for this un-

common use of fuel, Nigeria would rank with French West Africa at the bottom of the list.

V

Two statistical series of monetary type are available for comparison with the general nonmonetary indicator of relative status of nations with respect to consumption level. These two are (1) for 22 countries only, per capita national-income estimates, converted to United States dollars, for the year 1939; and (2) for all 31 countries, Colin Clark's estimates, again for 1939, of real income per hour worked, expressed in "international units," which are dollars of the purchasing power of the period 1925-34. Neither of these series was specifically designed to display national disparities in consumption levels. Yet it is easy, even natural, to suppose that fairly substantial differences between countries as shown by either of these series might well point to disparities in consumption levels, even allowing for difference in years covered. Let us see how these two monetary series look in comparison with the nonmonetary indicator thus far discussed.

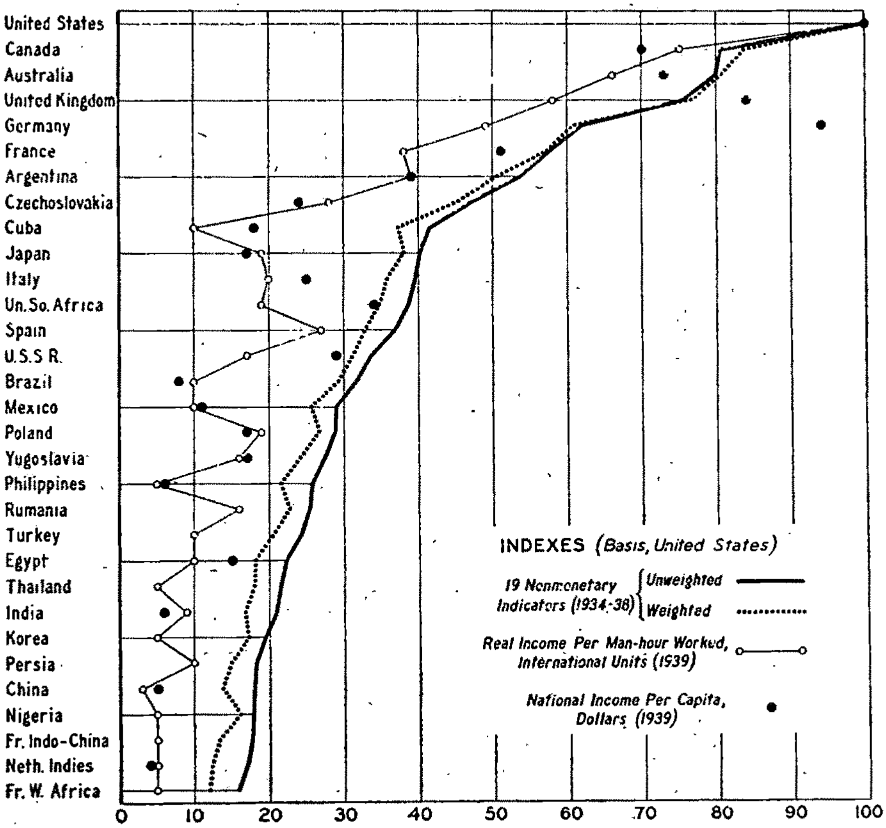
The comparison appears in Chart 2. There the heavy dots represent per capita national income in 1939 expressed in dollars, reduced to relatives with the figure for the United States taken as 100. The connected line of hollow circles represents Colin Clark's estimates of real income per hour worked in 1939 expressed in international units, reduced to relatives with the figure for the United States taken as 100. The heavy solid line represents the total scores for 1934-38, as in Chart 1, of the several countries with respect to 19 nonmonetary indicators of consumption level, with the total scores reduced to relatives and with the figure for the United States taken as 100. Countries are arrayed in the order imposed by this index of total scores. Finally, the dotted line represents the nonmonetary indicator when countries are scored by a system of weighting of the 19 indicators.

That system assumes that a weighting of 3 might reasonably be assigned to indicators of the percentage of calorie intake derived from other foodstuffs than grain and potatoes, to reciprocals of infant-mortality rates, to energy use per capita for household purposes chiefly, and to pieces of mail circulated per capita. It assumes a weighting of ½ is sufficient for climate, and of 1 for total calories consumed per 100 pounds of humanity per day, for tobacco consumption per capita, for lumber and cement consumption, for movie theaters and telephones per 1,000 of population, and for freight carried by rail. Other indicators are assigned a weight of 2.

Even with such weighting, which I do not defend though it may not be utterly absurd, only a few differences in ranking are suggested, as

compared with the unweighted scores. Japan, Poland, Rumania, and Korea are each moved up a step in rank, and the countries immediately above them are moved correspondingly down a step. Nigeria is moved up two steps in rank, but this shift comes solely because of the heavy weighting assigned to household use of energy, wherein the situation of Nigeria was most exceptional.

CHART 2.—NONMONETARY INDICATORS OF NATIONAL CONSUMPTION LEVELS (1934-38) AND REAL INCOME PER HOUR WORKED AND PER CAPITA DOLLAR NATIONAL INCOME (1939)*



* Data from Table III, page 648.

The several curves show both resemblances and contrasts. The general conformation is similar. That happens in large degree because there is full agreement regarding the seven countries which stand highest in the array, and because extent of disagreement is rather small with respect to the nine countries which stand lowest. There are, however, many contrasts—too many to list them all, much less discuss them.

One prominent discrepancy is that the per capita national-income

series puts Germany considerably ahead of the United Kingdom, whereas Clark's series and the nonmonetary indicators do not. German preparations for war in 1939 may contribute to this contrast. If one presses back into the 18 nonmonetary indicators (ignoring the balancing climatic indicator), Germany led the United Kingdom only in consumption of cement, percentage of school-age children attending school, and livestock numbers for 1,000 of population. With the United Kingdom leading Germany in 15 other aspects of consumption, it seems a reasonable inference that the prewar consumption level was higher there than in Germany.

Another prominent contrast is that the two nonmonetary indicators point to a higher consumption level in Cuba than in the Union of South Africa, while the two monetary series assign Cuba a relatively lower rank in national dollar income per capita and in real income per hour worked. Looking back into the several nonmonetary indicators, one finds the Cuban scores higher as to food and tobacco, medical and sanitary services, textile consumption, educational facilities, availability of movie theaters. The Union of South Africa scores more points notably in use of cement and of energy consumed in households, in transport and communication and manufacturing activity, and in livestock herds. If one should assign heavier weight to consumption of items of primary importance to masses of people, the higher general consumption level seems indicated in Cuba. We may have here a case in which the Union of South Africa is the more highly industrialized country yet the lower in general consumption level. The conclusion depends upon the assignment of importance to the several aspects of consumption. This looms large in comparing nations of widely different social structure; in this comparison there is in the Union of South Africa undoubtedly a very low consumption level among the non-European population which constitutes four-fifths of the total, and a very high level among the European population—a distribution not found in Cuba. The contrast points rather clearly to the desirability of bringing into comparisons of national consumption levels some evidence regarding the sharing of consumption items by individuals, or by racial, cultural, or geographical groups of people within nations. This I have not been able to undertake.

Another striking contrast is that between Brazil and Yugoslavia. Brazil leads with respect to nonmonetary indicators of consumption level, Yugoslavia with respect to the two monetary series. In housing, educational facilities, and use of energy in manufacturing, Yugoslavia leads but in no other aspects of consumption, and notably not in con-

sumption of food and tobacco. A strange system of weighting indicators would be required to support an interpretation which indicated the higher consumption level in Yugoslavia. Yet one ought to appraise more closely than I have done the accuracy of basic data.

A final striking contrast is that between the Philippines and Egypt, the Philippines leading according to nonmonetary indicators but not according to the monetary series. With the Philippines leading in consumption of food and tobacco, medical and sanitary services, education and recreation, and livestock count, the indications of Egyptian leadership perhaps in housing and in transport and communication (though not in motor vehicles, or in roads either per 1,000 of population or per 1,000 square miles) do not seem to throw a strong doubt on assignment of the higher rank in general consumption level to the Philippines.

It may perhaps be said with reasonable assurance that the monetary series in Chart 2 do not in general invalidate the ranking of countries with respect to consumption level given by the nonmonetary series. Granting that ranking is insecure in details and the basic information imperfect, it appears to be broadly trustworthy so far as one can bring evidence to bear.

VI

It must be obvious from the charts that just before World War II the disparities in consumption levels between the lowest-ranking and the highest-ranking nations were very wide, even if the method points to rank rather than degree of difference. We do not know what changes may have occurred since, although there is good reason to suppose that consumption levels have fallen in some countries and risen in others.

Nor do we know what changes in relative ranking may appear in decades to come. Some may hope and expect that disparities in consumption level will diminish, even disappear, with American foreign assistance programs aiding in the process. Ignoring the possibility of world war ending in Communist victory, it seems possible that some degree of equalization in consumption levels, as they are suggested here, may occur; for in some aspects of consumption, conspicuously such as school attendance and infant mortality, the leaders of 1934-38 were approaching limits and nations then lagging might catch up. But in a broader view of consumption level, taking account particularly of quality and of new inventions, the leading countries of 1934-38 might well continue to maintain their leadership, or indeed increase it. In any event equalization of national consumption levels seems less important and less realistic as an object of policy than change such that each country consistently shows absolute advances in one aspect or another

TABLE I.—NONMONETARY INDICATORS OF RELATIVE NATIONAL CONSUMPTION LEVELS, 31 COUNTRIES, TYPICALLY 1934–38: ABSOLUTE DATA*
(Highest-ranking country=100, each indicator)

Country	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
United States	2,699	68	3.3	192	1.37	271	133	2,923	12.1	51	161	132.8	10.21	1,413	207	137.0	4,265	1,045	283
Canada	2,640	64	2.3	156	.95	266	68	2,967	8.4	54	(153)	113.7	6.19	1,306	106	110.0	3,145	1,542	164
Australia	2,753	66	1.6	256	.94	168	96	1,183	8.5	49	141	207.4	4.40	907	101	79.0	1,311	5,824	364
United Kingdom	2,635	62	2.3	172	1.13	170	126	2,152	12.3	46	147	112.8	5.75	574	49	51.0	3,758	396	318
Germany	2,558	52	1.9	159	.69	142	150	1,409	8.2	53	83	82.1	5.45	475	25	49.0	2,671	573	223
France	2,662	48	1.6	141	.73	61	107	1,004	7.0	44	134	111.0	4.99	426	56	34.0	1,855	659	284
Argentina	2,946	56	1.9	104	1.05	52	80	239	6.7	31	51	97.4	3.51	432	20	25.5	508	5,164	339
Czechoslovakia	2,525	42	1.3	93	.76	82	67	723	5.1	51	62	158.2	3.18	311	10	8.6	1,888	557	209
Cuba	2,925	51	2.2	(95)	.63	30	38	207	4.8	20	48	87.2	3.48	143	7	10.2	275	1,843	365
Japan	2,637	23	.9	89	.87	89	70	593	9.1	42	63	27.0	1.49	115	2.3	15.4	863	83	278
Italy	2,647	33	1.0	97	.87	42	93	186	4.2	34	58	94.9	.79	151	11	12.4	590	344	327
Union So. Africa	2,272	28	1.0	(71)	.41	(27)	78	435	3.2	22	33	35.8	2.50	823	27	13.7	1,072	2,446	365
Spain	2,792	42	1.5	81	.93	22	33	167	2.4	24	36	114.5	1.12	151	8	12.2	370	684	346
U.S.S.R.	2,819	24	1.3	59	.76	118	27	630	3.7	27	34	17.3	1.83	392	1.4	4.9	752	828	187
Brazil	2,685	52	1.2	(87)	.31	45	12	258	3.8	(17)	(24)	31.2	.58	152	3.4	4.6	80	1,752	365
Mexico	2,051	45	.8	78	.51	16	16	103	2.9	20	11	44.1	.67	92	5.0	6.4	356	1,768	365
Poland	2,567	33	.6	72	.32	35	33	676	2.8	34	22	24.7	1.65	201	1.0	6.8	575	696	209
Yugoslavia	2,824	24	.6	71	.31	63	32	311	3.3	23	28	26.3	1.02	103	1.0	3.6	161	732	280
Philippines	2,441	33	1.7	73	.26	23	13	66	(2.5)	17	(19)	26.3	(.05)	18	3.3	1.9	48	443	365
Rumania	2,849	27	.4	56	(.31)	50	23	246	2.6	30	17	19.4	1.01	95	1.2	3.6	255	691	234
Turkey	2,831	29	2.0	80	(.14)	12	13	166	3.5	9	(6)	8.6	(.08)	53	.5	1.2	74	994	276
Egypt	2,669	28	.4	61	.21	10	25	126	3.1	12	7	8.0	.35	54	1.9	3.5	24	244	365
Thailand	2,447	41	.9	(67)	(.02)	19	6	26	(1.2)	12	(3)	8.2	(.06)	17	.6	.2	2	824	365
India	2,478	31	1.3	62	.12	3	2	39	2.2	7	3	2.8	.23	42	.3	.2	52	637	358
Korea	2,237	23	1.2	(83)	.13	3	14	194	(2.4)	8	17	(6.2)	(.20)	33	.4	2.4	254	111	230
Persia	2,126	33	1.0	(48)	(.01)	(8)	3	150	(2.5)	(3)	(0+)	2.3	(.05)	3	.5	(0+)	5	603	336
China	2,625	24	1.4	50	.04	4	1	91	1.7	6	2	.5	.07	8	.1	.4	23	244	291
Nigeria	(2,154)	(27)	.1	58	.01	6	2	1,413	.6	2	(0+)	.6	(.05)	13	.3	(0+)	17	279	365
Fr. Indo-China	2,499	23	.7	(67)	(.02)	10	4	53	1.1	4	(1)	3.9	.04	15	.7	.3	28	255	365
Neth. Indies	2,387	16	.9	(71)	.02	1	2	45	.9	6	1	5.0	(.05)	15	1.0	.2	37	166	365
Fr. W. Africa	2,154	27	.2	58	(.01)	6	8	29	(.6)	1	(0+)	.8	(.05)	18	1.2	(0+)	29	464	365

* Figures in parentheses represent author's interpolations. Principal sources: UN, FAO, *Food Balance Sheets* (April, 1949) [Cols. 1, 2]; *World Fiber Survey 1947* (August, 1947) [Col. 9]; *Forestry and Forest Products: World Situation 1937–46* (1946) [Col. 6]; *Yearbook 1948* and *1949* [Col. 3]. USDS, *Point Four . . .* (January, 1950) [Col. 5]; *Energy Resources of the World* (June, 1949) [Cols. 8, 14, 17, 19]. USDC, BFDC, *Foreign Commerce Yearbook, 1936* [Cols. 10, 11, 13, 15, 16]; *Foreign Commerce Weekly*, May 31, 1947 [Col. 12]. UN, *Statistical Yearbook 1948* [Col. 7]. IIA, . . . *Compendium International de Statistiques, 1924–1938* (1948) [Col. 18]. *Population Index* (July, 1949) [Col. 4].

Definitions of indicators in numbered columns: (1) Total food calories at retail level consumed per 100 lbs. of humanity per day, 1934–38. (2) Percentage of total food calories derived from foodstuffs other than grain and potatoes, 1934–38. (3) Tobacco (raw equivalent) utilization per capita, kgms., 1934–38. (4) Reciprocals of infant-mortality rates (deaths of infants under 1 yr. per 1,000 live births), 1936–40. (5) Physicians per 1,000 of population, various years 1938 to 1947. (6) Per capita utilization of sawn lumber, kgms., chiefly 1937, some 1947. (7) Per capita utilization of cement, kgms., 1934–38. (8) Per capita utilization of energy in households and public and nonindustrial buildings, kw.-hrs. elect. equiv., 1937. (9) Per capita availability of textile fibers (cotton, wool, rayon), kgms., 1938. (10) Percentage of school-age children (under 20) attending school, 1934. (11) Pieces of mail handled per capita, 1934. (12) Moving-picture theaters per million of population, 1940. (13) Freight carried by rail per 1,000 of population, M.T., 1935. (14) Per capita utilization of energy by railways and waterways, kw.-hrs. elect. equiv., 1937. (15) Automobiles, trucks, buses, and half the number of motorcycles per 1,000 of population, 1936. (16) Telephone instruments per 1,000 of population, 1935. (17) Per capita utilization of energy in industry, kw.-hrs. elect. equiv., 1937. (18) Animal units per 1,000 of population, 1938. (19) Number of days per yr. with temperature above 41° F.

Table II.—Nonmonetary Indicators of Relative National Consumption Levels, 31 Countries, Typically 1934–38: Relative Data*
(Highest-ranking country = 100, each indicator)

Country	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20(Σ)
United States	91.6	100.0	100	75.0	100	100.0	88.7	98.5	98.4	94.4	100.0	64.0	100.0	100.0	100.0	100.0	100.0	17.9	78	1,707
Canada	89.6	94.1	70	60.9	69	98.2	45.3	100.0	68.3	100.0	(95.0)	54.8	60.6	92.4	51.2	80.3	73.7	26.5	45	1,375
Australia	93.4	97.1	48	100.0	69	62.0	64.0	39.9	69.1	90.7	87.6	100.0	43.1	64.2	48.8	57.7	30.7	100.0	100	1,365
United Kingdom	89.4	91.2	70	67.2	82	62.7	84.0	72.5	100.0	85.2	91.3	54.4	56.3	40.6	23.7	37.2	88.1	6.8	87	1,290
Germany	86.8	76.5	58	62.1	50	52.4	100.0	47.5	66.7	98.1	51.6	39.6	53.4	33.6	12.1	35.8	62.6	9.8	61	1,058
France	90.4	70.6	48	55.1	53	22.5	71.3	33.8	56.9	81.5	83.2	53.5	48.9	30.1	27.1	24.8	43.5	11.3	78	984
Argentina	100.0	82.4	58	40.6	77	19.2	53.3	8.1	54.5	57.4	31.7	47.0	34.4	30.6	9.7	18.6	11.9	88.7	93	916
Czechoslovakia	85.7	61.8	39	36.3	55	30.3	44.7	24.4	41.5	94.4	38.5	76.3	31.2	22.0	4.8	6.3	44.3	9.6	57	803
Cuba	99.3	75.0	67	(37.1)	46	11.1	25.3	7.0	39.0	37.0	29.8	42.0	34.0	10.1	3.4	7.4	6.4	31.6	100	708
Japan	89.5	33.8	27	34.8	64	32.8	46.7	20.0	74.0	77.8	39.1	13.0	14.6	8.1	1.1	11.2	20.2	1.4	76	685
Italy	89.9	48.5	30	37.9	64	15.5	62.0	6.3	34.1	63.0	36.0	45.8	7.7	10.7	5.3	9.1	13.8	5.9	90	676
Union So. Africa	77.1	41.2	30	(27.7)	30	(10.0)	52.0	14.7	26.0	40.7	20.5	17.3	24.5	58.2	13.0	10.0	25.1	42.0	100	660
Spain	94.8	61.8	45	31.6	68	8.1	22.0	5.6	19.5	44.4	22.4	55.2	10.9	10.7	3.9	8.9	8.7	11.7	95	628
U.S.S.R.	95.7	35.3	39	23.0	55	43.5	18.0	21.2	30.1	50.0	21.1	8.3	18.0	27.7	.7	3.6	17.6	14.2	51	573
Brazil	91.1	76.5	36	(34.0)	23	16.6	8.0	8.7	30.9	(31.5)	(15.0)	15.0	5.7	10.8	1.6	3.4	1.9	30.1	100	540
Mexico	69.6	66.2	24	30.5	37	5.9	10.7	3.5	23.6	37.0	6.8	21.3	6.6	6.5	2.4	4.7	8.3	30.4	100	495
Poland	87.1	48.5	18	28.1	23	12.9	22.0	22.8	22.8	63.0	13.7	11.9	16.2	14.2	.5	5.0	13.5	12.0	57	492
Yugoslavia	95.9	35.3	18	27.7	23	23.2	21.3	10.5	26.8	42.6	17.4	12.7	10.0	7.3	.5	2.6	3.8	12.6	77	468
Philippines	82.9	48.5	51	28.5	19	8.5	8.7	2.2	(20.0)	31.5	(12.0)	12.7	(.5)	1.3	1.6	1.4	1.1	7.6	100	439
Rumania	96.7	39.7	12	21.9	(23)	18.5	15.3	8.3	21.1	55.6	10.6	9.4	9.9	6.7	.6	2.6	6.0	11.9	64	434
Turkey	96.1	42.6	61	31.2	(10)	4.4	8.7	5.6	28.5	16.7	(4.0)	4.1	(.8)	3.8	.2	.9	1.7	17.1	76	413
Egypt	90.6	41.2	12	23.8	15	3.7	16.7	4.2	25.2	22.2	4.3	3.9	3.5	3.8	.9	2.6	.6	4.2	100	378
Thailand	83.1	60.3	27	(26.2)	(2)	7.0	4.0	.9	(10.0)	22.2	(2.0)	4.0	(.6)	1.2	.3	.1	.0	14.1	100	365
India	84.1	45.6	39	24.2	9	1.1	1.3	1.3	17.9	13.0	1.9	1.4	2.2	3.0	.1	.1	1.2	10.9	98	355
Korea	75.9	33.8	36	(32.4)	10	1.1	9.3	6.5	(20.0)	14.8	10.6	(3.0)	(2.0)	2.3	.2	1.8	6.0	1.9	63	331
Persia	72.2	48.5	30	(18.8)	(1)	(3.0)	2.0	5.1	19.5	(5.6)	(.2)	1.1	(.5)	.2	.2	(.0)	.1	10.4	92	310
China	89.1	35.3	42	19.5	3	1.5	.7	3.1	13.8	11.1	1.2	0.2	.6	.6	.0	.3	.5	4.2	80	307
Nigeria	(73.1)	(39.7)	3	22.7	1	2.2	1.3	47.6	4.8	3.7	(.0)	.3	(.5)	.9	.1	(.0)	.4	4.8	100	306
Fr. Indo-China	84.8	33.8	21	(26.2)	(2)	3.7	2.7	1.8	8.9	7.4	(.6)	1.9	.4	1.1	.3	.2	.7	4.4	100	302
Neth. Indies	81.0	23.5	27	(27.7)	1	.4	1.3	1.5	7.3	11.1	.6	2.4	(.5)	1.1	.5	.1	.9	2.9	100	291
Fr. W. Africa	73.1	39.7	6	22.7	(1)	2.2	5.3	1.0	(4.8)	1.9	(.0)	.4	(.5)	1.3	.6	(.0)	.7	8.0	100	269

* For sources, and definitions of indicators, see footnotes of Table I.

TABLE III.—NONMONETARY INDICATORS OF RELATIVE NATIONAL CONSUMPTION LEVELS COMPARED WITH MONETARY SERIES

Country	Absolute Data				Relative Data			
	Nonmonetary Indicators		Monetary Series		Nonmonetary Indicators		Monetary Series	
	1	2	3	4	1A	2A	3A	4A
United States	1,707	3,025	1.00	554	100.0	100.0	100	100
Canada	1,375	2,533	.75	389	80.6	83.7	75	70
Australia	1,365	2,437	.66	403	80.0	80.6	66	73
United Kingdom	1,290	2,317	.58	468	75.6	76.6	58	84
Germany	1,058	1,835	.49	520	62.0	60.7	49	94
France	984	1,733	.38	283	57.6	57.3	38	51
Argentina	916	1,524	.39	218	53.7	50.4	39	39
Czechoslovakia	803	1,368	.28	134	47.0	45.2	28	24
Cuba	708	1,130	.10[a]	98	41.5	37.3	10	18
Japan	685	1,149	.19	93	40.1	38.0	19	17
Italy	676	1,085	.20	140	39.6	35.8	20	25
Union So. Africa	660	1,053	.19	188	38.7	34.8	19	34
Spain	628	991	.27	—	36.8	32.8	27	—
U.S.S.R.	573	944	.17	158[b]	33.6	31.2	17	29
Brazil	540	888	.10[a]	46	31.6	29.3	10	8
Mexico	495	804	.10[a]	61	29.0	26.6	10	11
Poland	492	838	.19	95	28.8	27.7	19	17
Yugoslavia	468	728	.16[a]	96	27.4	24.1	16	17
Philippines	439	654	.05[a]	32	25.7	21.6	5	6
Rumania	434	688	.16[a]	—	25.4	22.7	16	—
Turkey	413	620	.10[a]	—	24.2	20.5	10	—
Egypt	378	547	.10	85	22.2	18.1	10	15
Thailand	365	544	.05[a]	—	21.4	18.0	5	—
India	355	507	.09	34	20.8	16.8	9	6
Korea	331	521	.05[a]	—	19.4	17.2	5	—
Persia	310	447	.10[a]	—	18.2	14.8	10	—
China	307	418	.03	29	18.0	13.8	3	5
Nigeria	306	492	.05[a]	—	17.9	16.2	5	—
Fr. Indo-China	302	402	.05[a]	—	17.7	13.3	5	—
Neth. Indies	291	372	.05[a]	22	17.0	12.3	5	4
Fr. W. Africa	269	364	.05[a]	—	15.8	12.0	5	—

[a] As indicated by a geographical grouping including the country specified.

[b] Specified in source as estimate by P. A. Baran, "National Income and Product of the USSR, 1940," *Review of Economic Statistics* (November, 1947).

Explanation of series: (1) Summation of relatives of 19 indicators, unweighted, from Col. 20, Table II. (2) Summation of relatives of 19 indicators, from Table II, weighted as follows: weight of 3—indicators 2, 4, 8, 11; weight of 2—indicators 5, 9, 10, 13, 14, 15, 17, 18; weight of 1—indicators 1, 3, 6, 7, 12, 16; weight of $\frac{1}{2}$—indicator 19. (3) "Real income per man-hour worked," 1939, in international units ("quantity of goods and services exchangeable for $1 over the period 1925–34"), from Colin Clark, "World Resources and World Population," *Proceedings of the United Nations Conference on the Conservation and Utilization of Resources* (1950), Vol. 1, p. 26. (4) "Per capita income, U. S. dollars per annum," 1939, from USDS, *Point Four . . .* (January, 1950), pp. 115–16. (1A–4A) Relatives of data in Cols. 1–4, U.S. = 100.

of consumption level. Existing international organizations might perform a useful service in carefully selecting and compiling or urging the compiling of nonmonetary statistical series which could tell us, country by country and year by year, what changes are occurring in various segments of national consumption levels. There would be need to consider indicators other than those used here. There would be still greater usefulness in extending such evidences of change to national levels of living.

The circumstances of life of the modal family in those countries ranking lowest in consumption level in 1934-38 would have appeared appalling indeed to anyone brought up in the consumption level of the United States, and so they would appear today.

That modal family gained its living in agriculture. Its residence was more commonly in a village than on a farmstead. Around that village the American observer would see no railroad tracks or paved roads, no telephone wires. In it he would see no movie theater and few shops, no farm machinery but some simple tools and a few draft animals, no offices of doctors and dentists. He would be struck by the paucity of metal in the construction of buildings, and by a lack of paint inside and out. Within the dwellings he would note an abundance of children and probably of insects. He would observe a meagerness of floor space, a lack of subdivision into rooms, a lack of glazed windows, of screens, of electric or gas lighting, of bathrooms or piped-in water, of modern stoves, of chimneys, of refrigerators, of beds with springs, of newspapers or books, of tables or chairs, of shoes; a lack of distinction between undergarments and outer garments; a lack of pots and pans and plates, of soap. He might see an open fire of charcoal or wood, even of dried dung in some areas, sometimes a kerosene lamp and a hand loom. He would find the meals in rice-growing areas typically of boiled rice, probably milled crudely by the housewife, accompanied by vegetables and fruits or a sprinkling of dried fish but rarely by meat, fat, or sugar; and in nonrice-growing areas typically of soup or porridge or of flatcakes of crushed grain, with vegetables and fruits and occasionally a bit of meat.

Yet he might not find that daily work in the fields was exhausting or that people were hungry or sullen. A low consumption level need not imply a low degree of satisfaction of felt wants, or a high level of discontent. Perhaps an understanding of the relationship of consumption level to consumption standard, still better of level of living to standard of living, in the various nations of the world would prove more fruitful in study of political and economic change than appraisal of disparities in consumption level. Certainly the argument that low consumption level leads to discontent to revolution to aggressive war

PRICE DETERMINATION IN THE LAKE ERIE IRON ORE MARKET

By L. GREGORY HINES*

The largest iron and steel industry in the world has been built from the iron ore deposits found in the border states of Lake Superior.[1] The ore has been mined in Minnesota and Michigan, shipped down the Lakes to Erie ports for eastern use, or diverted to Lake Michigan and the closer Chicago-Gary area. The Lake Superior ore deposits, formerly rich and plentiful, have exerted a strong influence upon the location and development of heavy industry in the United States, and have provided the essential base for the sustained and rapid industrialization of this country. The costs of mining and moving this raw material to the blast furnace have been kept low through the prevailing open-pit methods of extraction and through the use of specialized ore carriers on the Great Lakes waterway.

The Lake Superior iron region has furnished more ore for the American iron and steel industry than all other domestic and foreign sources combined—averaging approximately eighty-five per cent of all iron ore used in the United States during the past two decades. During this same period, one Lake Superior range—the Mesabi of Minnesota—has contributed over eighty per cent to the total Lake Superior production, conferring the advantages of high-grade, easily mined iron ore upon the firms owning deposits in this district.[2] The production and pricing of iron ore from other regions of the country affects, by comparison with that from the Lake Superior district, a small number of iron and steel producers confined to somewhat isolated centers of production. The pricing practices developed in the Lake Superior district, on the other hand, affect intimately the very heart of the American iron and steel industry. The distribution of iron ore ownership within the iron and steel industry and the limited number of quasi-independent ore factors serving this industry have been important economic facts of

* The author is assistant professor of economics at Dartmouth College. He expresses indebtedness to the late Professor Frederic B. Garver and to Professor George J. Stigler for helpful suggestions and criticism in the preparation of this paper.

[1] The Lake Superior iron ranges are the Mesabi, Vermilion, and Cuyuna in Minnesota; the Gogebic, Marquette, and Menominee in Michigan; the nonshipping deposits of the Barboo and Mayville in Wisconsin; and the recently developed deposits in Canada.

[2] For information on the production of United States iron ore districts, see *Mining Directory of Minnesota, 1950* (Minneapolis, *Bulletin of the University of Minnesota Institute of Technology*, Vol. 53, No. 23, May, 1950).

life in the growth and development of steel firms in the American economy.

Lake Superior iron ore production by operating concerns for the period 1945-1949 is shown in Chart I. The leading firm in both production of ore and high-grade reserves is the Oliver Iron Mining Company, a subsidiary owned by the United States Steel Corporation. Producing almost half of the total shipments from the Lake Superior region, the Oliver Company restricted its ore sales to other members of the Steel Corporation until 1940. The distribution of the Oliver Company's sales of ore since 1940 is shown in Table I.

TABLE I.—DISTRIBUTION OF OLIVER IRON MINING COMPANY'S ORE SALES BETWEEN U. S. STEEL SUBSIDIARIES AND OUTSIDE FIRMS
(Gross tons)

Year	U.S. Steel	Outside Sales	Year	U.S. Steel	Outside Sales
1939	22,847,451	202	1945	33,531,429	9,276,672
1940	30,879,171	869,563	1946	26,669,957	7,431,732
1941	36,965,618	2,534,057	1947	35,737,870	6,931,491
1942	41,879,260	5,204,779	1948	38,469,386	5,724,833
1943	41,068,547	5,424,501	1949	33,241,829	4,114,326
1944	38,127,104	6,678,757			

Source: Subcommittee on the Study of Monopoly Power, "Memorandum I," *Exhibits*, Serial 14, Part 4-B (Committee of the Judiciary, House of Representatives, 81st Cong., 2nd Sess.), p. 496.

Pickands, Mather & Company, the second largest ore shipper in the Lake market, sells little ore on the open market. Most of its shipments result from the management of ore properties for steel firms and the sale of the limited amount of ore which it does own to such firms under long-term contract. The Cleveland-Cliffs Iron Company, on the other hand, owns or leases in its own right most of the ore which it sells, thus representing the closest approach to an independent ore firm of any size to be found in the Lake Superior area. In characterizing Cleveland-Cliffs as an independent ore firm one must, however, accept a rather loose definition of the term. It has close stock and/or management relationships with Republic Steel, Youngstown Sheet & Tube, Wheeling Steel, Inland Steel, and Jones & Laughlin. The M. A. Hanna Company, formed as a partnership in the late 1860's, became the raw material department for the National Steel Corporation in 1929 when the latter firm was organized. Although the Hanna Company carries on limited ore business with other firms, it is an affiliate of National Steel and its main ore business is serving that firm. Oglebay, Norton & Company, which has the smallest ore shipments of the firms

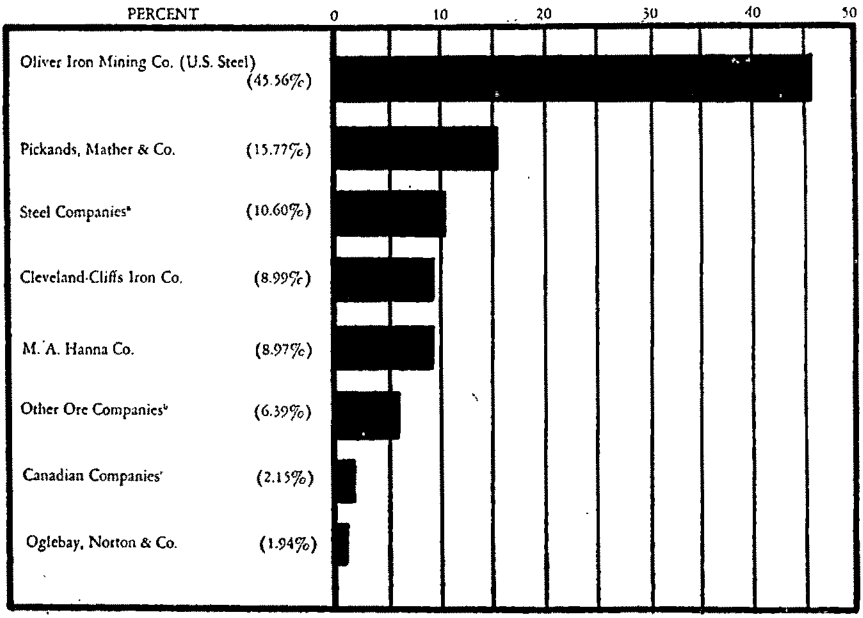


CHART I. LAKE SUPERIOR IRON ORE SHIPMENTS, 1945-1949 BY PRINCIPAL PRODUCERS

Source: Computed from Exhibit S-43, Subcommittee on Study of Monopoly Power, *Steel Exhibits,* Serial No. 14, Part 4-B, p. 69.

[a] Eight companies in 1945; seven in 1946-1949.

[b] 1945, 5 companies; 1946, 7; 1947, 10; 1948, 13; 1949, 12.

[c] Algoma Ore Properties, Ltd., and Steep Rock Iron Mines, Ltd.

In 1937 these percentages were as follows: Oliver Iron Mining Company, 42.2%; Pickands, Mather & Co., 21.9%; Steel companies, 14.9%; Cleveland-Cliffs Iron Co., 9.1%; M. A. Hanna Co., 3.5%; Other ore companies, 2.9%; Canadian companies, 0; Butler Brothers, 2.9%; Oglebay, Norton & Co., 2.6%. TNEC, *Hearings,* Part 18, p. 10426.

listed in Chart I, is a managing firm which operates the properties of the owning steel firms under their direction.[3]

The early history of the price-making process in the Lake Erie ore market was characterized by a series of frustrating experiences with mercurial pooling arrangements leading to eventual price stability as a result of changes in the structure of the industry. Concentration of ownership and control of ore reserves by the integrated steel producers and a small number of quasi-independent ore factors took place steadily after the turn of the 20th century until now the iron ore industry may be accurately described as a captive of the steel industry. Extreme stability has marked the Lake Erie iron ore price, so called because the charges include transportation rates for delivery to Lower Lake ports. Iron ore sold for $4.25 per ton from 1925 until 1929, in which year the price was raised to $4.50; it remained at $4.50 per ton until

[3] For information on the interrelations of the ore and steel firms, see TNEC, *Hearings,* Part 18, *passim.*

1937, when it was increased to $4.95. In 1940, the first year in which the Oliver Iron Mining Company sold ore on the open market, the price fell to $4.45, and did not change until 1946 when it was increased

TABLE II.—LAKE ERIE BASE PRICE OF IRON ORE*
(Gross tons)

Season	Date Price Established	Old Range Bessemer	Old Range Non-Bessemer	Mesabi Bessemer	Mesabi Non-Bessemer	High Phosphorus
1925	Apr. 4, 1925	$4.55	$4.40	$4.40	$4.25	$4.15
1926	Mar. 17, 1926	4.55	4.40	4.40	4.25	4.15
1927	Apr. 8, 1927	4.55	4.40	4.40	4.25	4.15
1928	Apr. 16, 1928	4.55	4.40	4.40	4.25	4.15
1929	Mar. 22, 1929	4.80	4.65	4.65	4.50	4.40
1930	Apr. 1, 1930	4.80	4.65	4.65	4.50	4.40
1931	Apr. 15, 1931	4.80	4.65	4.65	4.50	4.40
1932	June 3, 1932	4.80	4.65	4.65	4.50	4.40
1933	June 7, 1933	4.80	4.65	4.65	4.50	4.40
1934	May 21–26, '34	4.80	4.65	4.65	4.50	4.40
1935	Apr. 23, 1935	4.80	4.65	4.65	4.50	4.40
1936	Apr. 1, 1936	4.80	4.65	4.65	4.50	4.40
1937	Mar. 8, 1937	5.25	5.10	5.10	4.95	4.85
1938	May 23, 1938	5.25	5.10	5.10	4.95	4.85
1939	May 3, 1939	5.25	5.10	5.10	4.95	4.85
1940	Apr. 16, 1940	4.75	4.60	4.60	4.45	4.35
1941	Apr. 17, 1941	4.75	4.60	4.60	4.45	4.35
1942	Apr. 10, 1942[a]	4.75	4.60	4.60	4.45	4.35
1943	——[a]	4.75	4.60	4.60	4.45	4.35
1944	——[a]	4.75	4.60	4.60	4.45	4.35
1945	——[a]	4.95	4.80	4.70	4.55	4.55
1946	——[a]	5.45	5.30	5.20	5.05	5.05
1947	Jan. 25, 1947	5.95	5.80	5.70	5.55	5.55
1948	Mar. 27, 1948	6.60	6.45	6.35	6.20	6.20
1949	Dec. 30, 1948	7.60[b]	7.45[b]	7.35[b]	7.20[b]	7.20[b]
1950	Jan. 26, 1950	8.10[c]	7.95[c]	7.85[c]	7.70[c]	7.70[c]

* Based on the following analysis: Bessemer 51.50% Fe and 0.045% Phos.; Non-Bessemer, 51.50% Fe.
[a] Prices controlled by U.S. Office of Price Administration.
[b] Six percent increase in dock unloading charge of $0.18, effective January 11, 1949.
[c] After January 25, 1950, increases or decreases, if any, in Upper Lake rail freight, dock handling charges, and taxes thereon are for buyer's account.
Source: Mining Directory of Minnesota, 1950, p. 234.

to $5.05 per ton. Since 1946, the price has changed more frequently: 1947—$5.55; 1948—$6.20; 1949—$7.20; and 1950—$7.70.[4] Lake Superior iron ore is priced in five classifications: Old Range Bessemer, Old Range Non-Bessemer, Mesabi Bessemer, Mesabi Non-Bessemer,

[4] See Table II. Above prices are for Mesabi Non-Bessemer 51.50 Fe.

and High Phosphorus ore. The division between Old Range and Mesabi ores is made primarily in terms of the structure and density of the ores, whereas the classification of Bessemer, Non-Bessemer, and High Phosphorus is dependent upon the ore's phosphorus content. Within these five broad divisions prices for the ore are adjusted on the basis of 51.50 per cent Fe as the standard.[5]

The procedure followed in the establishment of the season's price for iron ore has facilitated the practice of price leadership in the industry. Prior to the opening of the shipping season on the Great Lakes, the price of iron ore (including shipping charges to Lower Lake ports) is fixed by the publication in the Cleveland *Plain Dealer* of the first market transaction involving a substantial sale of iron ore for delivery during the forthcoming season.[6] This event is not, however, left to the

[5] The 51.50 iron natural standard used in computing the price of the various grades of ores should not be confused with the average iron content of Lake Superior ore shipments. Ore shipments will of course vary from the pricing standard as indicated by the 1949 average of 50.39 Fe for all Lake Superior shipments in comparison with the higher average of 51.38 Fe for the 1940-1949 period. (*Mining Directory of Minnesota, 1950*, p. 225.) All ores containing .045 per cent phosphorus or less are classified as Bessemer; more than .045 per cent phosphorus, but not more than .180 per cent, are Non-Bessemer; and above .180 per cent phosphorus are sold as High Phosphorus ores. Price premiums are given for low phosphorus content (less than .045 per cent), for high manganese content, and for lump structure. Such premiums vary and are determined by negotiation between the buyer and seller. Penalties are imposed for high silica content and for fine structure.

The price adjustment for iron content higher than the standard (51.50 Fe) is applied at a proportional rate of increase, whereas the penalty for ore below the standard results in a progressive decrease in the price. Thus, to obtain the price of ore in terms of its iron content, the base price is divided by 51.50, the number of iron units in the base ore. The resultant quotient is the base unit value which is used to determine additions to, or subtractions from, the standard base price established in the market. For example, when the ore is higher than 51.50 in iron content, the base unit value is added for each unit or fraction of a unit above the standard; when the ore is less than 51.50 in iron content, the base unit is substracted for each unit or fraction of a unit below the standard. For less than 50.00 Fe, but not less than 49.00 Fe, deduction is made at the rate of one and one-half times the base unit value. Ore of iron content less than 49.00 is priced at a deduction of twice the base unit value. The following illustration applies this technique to Mesabi Non-Bessemer ore with a base price of $7.20 per ton for standard ore of 51.50 Fe.

60.00 Fe ore	Unit Value = $.13981	Lake Erie price = $8.39
55.00 Fe ore	Unit Value = .13981	Lake Erie price = 7.69
51.50 Fe ore	BASE ORE PRICE SET BY MARKET =	7.20
50.00 Fe ore	Unit Value = $.13981	Lake Erie price = 6.99
49.00 Fe ore	Unit Value = .20972	Lake Erie price = 6.78

Below 49.00 Fe, deduct $.27962 per unit.

(See *Mining Directory of Minnesota, 1950*, p. 50.)

[6] For the years from 1936 to 1941 and 1947 to 1949 (omitting the OPA control period), the ore firm establishing the seasonal Lake Erie base price has been identified three times: 1940, Pickands, Mather & Co.; 1948, Cleveland-Cliffs Iron Co.; and 1949, Cleveland-Cliffs. Generally the announcement of the establishment of the new price is reported as follows: "One of the large ore shippers yesterday announced that it had made some sales of iron ore at an advance of 50 cents a ton over last season's price, and that its schedule of prices for 1947 delivery is as follows. . . ."—Cleveland *Plain Dealer*, January 25, 1947.

The trade journals, *Steel, Iron Age*, and *Engineering & Mining Journal*, generally reprint the information from the Cleveland *Plain Dealer* without significant alteration.

caprice of the market. The crucial sale is invariably made by one of the larger ore companies—although the parties to the transaction are seldom identified—and is carefully selected so as to embody the most generous valuation which is possible in view of the season's expectations and consistent with the interests of the more powerful parent iron and steel industry. The selection of the "correct" official price for publication is undoubtedly made difficult because of the various forces which must be considered. A price must be chosen which will promote over-all stability of the ore industry, one which will not cause serious discontent among the ore-producing concerns—especially the more nearly independent firms—or result in serious "shading" of the official ore price. Thus, Cleveland-Cliffs, which owns much of the ore that it sells, has a considerably different interest in the ore price from that of Oglebay, Norton, which merely acts as a management concern for the owners of ore properties, or the M. A. Hanna Company, which is an affiliate of National Steel. In turn, the Oliver Iron Mining Company occupies a unique position among all the ore firms in the Lake Superior region: it is the largest ore shipper in the region, a subsidiary of the largest iron and steel producer in the industry, and also sells an appreciable amount of ore in the open market to rival steel producers. Different problems are raised by the variety of relationships which exist between ore concerns and purchasing and owning steel producers. As a result, the price of iron ore represents a conciliation point which the majority of ore producers and steel firms find tolerable if not completely satisfactory. Because of the prevalence of long-term ore contracts and the steel industry's preoccupation with stability, the previous year's iron ore price has usually been reinstated during periods of normal business conditions.

Two types of sales occur in the Lake Erie iron ore market: (1) spot, or seasonal sales, and (2) long-term contract sales. Spot sales cover ore transactions made during the current shipping season, whereas long-term contract sales are the result of an agreement covering more than the current shipping season. Arrangement may be made between an ore concern and a steel producer, or an ore concern and an independent mine operator, whereby the former promises to buy a specified tonnage of ore per year for a period of, say, ten years. The price of ore may be set at a specific figure, or, as is more frequently the case, the ore will be priced at a discount of the annual seasonal price. During hardship periods it is unlikely that relaxation of the price agreement under long-term contract will be permitted by the seller, except as a result of extremely unusual circumstances; instead, some reduction in tonnage delivery may be allowed. The Lake Erie base price is the standard used in computing the actual, realized

price for both long-term contract sales and spot sales, with the latter price more closely approximating the Lake Erie published price.

With the decline to virtual insignificance of the larger independent ore firms in the Lake Superior region, the importance of spot ore sales has decreased, although the Oliver Iron Mining Company has adopted a policy of replacing long-term ore contracts made in 1940 by short-term sales on a year-to-year basis. More ore is likely to be sold by spot purchases during a depression when the demand for ore is less and when steel producers may attempt to take advantage of "distress ore." Such ore usually comes on the market at quotations considerably below the published Lake Erie price.[7] On the other hand, during periods of heavy demand for iron and steel products, the output of ore mines is usually contracted for well in advance of the shipping season, thus eliminating a substantial part of the sales which otherwise take place during the shipping season. Under prosperity conditions the problem faced by the steel firm is to obtain a sufficient amount of ore to maintain capacity output of the steel mill, rather than to purchase ore at the lowest possible price. Because of the great fluctuations in iron and steel sales, ore production and sales have varied over an extremely wide range—with ore sales falling at a greater rate than steel sales and increasing more rapidly than the output of iron and steel production. Undoubtedly, one of the more important causes of instability of ore sales is the purchasing steel firm's practice of withholding buying as long as possible in anticipation of greater discount from the published ore price, whereas the attempt to cover capacity requirements for the future during a period of business recovery stimulates heavy production and sale of iron ore.[8] As a result, spot sales have played a prominent part in the Lake Erie ore market during depression periods to the extent that purchasing firms are not bound by long-term contracts, but have played a considerably smaller part during prosperity periods.

[7] C. M. White, president of Republic Steel, testified before the Subcommittee on the Study of Monopoly Power that Republic's ore-buying policy is adapted to the conditions of the ore market. He said: "At different times and in different business cycles we use different methods. At one time—this was prior to the war—it was the fixed policy of our corporation that we did not want to be committed for more than about one-half of our ore. In other words, there was distress ore coming on the market quite frequently, due to the fixed carrying charges that many companies had—steel companies and ore companies—and we could buy ore on a better basis than we could own it, or make long-term contracts. Then, with the war and postwar periods coming along, when the tremendous ore reserves had been used up due to the war and postwar activity, after that situation changed we had gone over to an ownership or long-time contract, because there just was not enough ore, as we saw it, to play the market."—SSMP, *Hearings*, Serial 14, Part 4-A, p. 240.

See *ibid.*, p. 445, for a statement on the unimportance of spot ore sales at the present time.

[8] It should be noted, however, that as ore-ownership becomes concentrated in the hands of producing steel firms such bargaining for ore purchase becomes less important.

The influence of the smaller ore firm upon the dominant ore concern's decisions and actions in establishing the Lake Erie base price is illustrated by the operations of Butler Brothers during the period in which it was an independent producer in the Lake Superior region.[9] In comparison with the Oliver Company and the quasi-independent ore firms, Butler Brothers was a small firm, but during depression periods its ore production was large enough that by a concentration of output in an early season sale it presented a threat to the establishment and maintenance of the published Lake Erie price by the larger ore firms. Although Butler Brothers held no stock connection with steel producers to aid it in disposing of ore, it maintained a close working relationship with the Pickands, Mather & Company and the M. A. Hanna Company. Butler Brothers entered into an arrangement with Pickands, Mather which gave the latter concern an option to purchase Butler's surplus tonnage of from thirty to fifty per cent of its annual production, depending on Butler Brothers' existing contracts and the condition of the ore market.[10] As a result, Butler Brothers' production and price policies were closely tied to those of the dominant ore concerns.

However, Butler Brothers' problems were not solved by alignment with the Pickands, Mather Company. The gain from price cutting was a tantalizing possibility, although apparently kept in check by the penalty of discovery. As the depression deepened during the 'thirties, Butler Brothers chafed more and more under the restraint of a price established by the larger firms. The following quotations indicate the dilemma faced by the smaller concern in deciding whether to follow or break away from the price leader in the industry.

> I had a talk with Elton Hoyt yesterday and he talked me out of quoting Ford on any of our grades at less than the full market price. He said the market for standard ores is still a little shaky and that it would be dangerous to quote Ford anything under the full price.
> On the Hume quotation, there would be too much danger of the Corporation learning that we were using any other basis for figuring other than we submit to them. And I'm afraid that our goose would be cooked if Shiras ever heard of it.

[9] Butler Brothers was absorbed by the M. A. Hanna Company in the fall of 1948.

[10] The purpose of this arrangement between Butler Brothers and Pickands, Mather is indicated in the following inter-department memorandum from Patrick Butler, in charge of ore sales, to Emmett Butler, president of the company. The memorandum is dated September 4, 1928.

> I have talked with Hoyt [Elton Hoyt, president of Pickands, Mather] this afternoon . . . he wants first call on any additional tonnage our present properties might show up. This is to keep us out of the market as much as possible. This first call means that should we feel we ought to produce more, or that we are in a position to take on additional contracts, that we should offer the ore to them before we do so to anyone else. . . .—TNEC, "Exhibit 1362," Part 18, p. 10435.

> In light of the above I am submitting today quotations . . . at the full season's prices.[11]

As iron ore became more difficult to sell, the desirability of capturing one of the season's large sales became more attractive. Butler Brothers decided to exert its influence in such a way that it would obtain the sale of its ore or the protection from the larger firms. The Ford Motor Company's call for ore bids brought this matter to a head.

> I have before me Cliff Wyman's letter of the 26th which states, among other things, that Ford's inquiry for 50,000 tons of ore is out. Now the question arises whether to wait for the other big ore merchants to quote Ford before making our quotation or to attempt to arrange some trade with Ralph Archibald and get the business without the formality of quoting a price. I do not know, of course, whether or not this can be done. . . .
>
> I think, possibly, this would be a good time to say to our customers, particularly P. M. [Pickands, Mather] and Hanna Co., "What are you going to do with this year's business, and what price are you going to put on ore?" They will no doubt answer to that that they do not know because they have not had their ore meeting, and stall beyond the date that Ford has fixed to close the bidding, and probably slip in a bid in the meantime. Why not tell them that we want to move tonnage and that we are either going after the Ford business in our own way or they are going to guarantee us an additional tonnage over their minimum equal to that of Ford's inquiries? . . .[12]

Butler Brothers' threat to dispose of ore by price cutting obtained the desired concession from Pickands, Mather, since a subsequent letter indicated that the larger concern had agreed to take Butler's surplus tonnage and that no break in the price to be quoted Ford was to take place.[13]

For most ore firms, especially the larger affiliated concerns, the seasonal price of ore is less important as a determinant of the amount of ore it sells than as a standard which establishes the realized price on the ore sold under long-term contract. It is at this point that a conflict arises between the interests of the smaller independent and the larger firm. In order to keep the smaller concern from breaking or drastically undercutting the published price, thereby reducing the income of the larger firm from its long-term contract sales, it may be desirable for the latter to absorb the tonnage of the small firm if it could make a large sale at the start of the season. However, once the price for the season has been established, price shading through negoti-

[11] "Exhibit 1370," *ibid.*, p. 10441. (Letter dated March 29, 1929.)

[12] "Exhibit 1378," *ibid.*, p. 10446. (Letter dated March 28, 1934.)

[13] "Exhibit 1369," *ibid.*, p. 10441. (Letter dated April 10, 1934.)

ation has little effect upon the ore moved under contract as long as it does not result in widespread price cutting throughout the industry. One method of localizing such price cutting is for the larger ore firm, which may act as the management agent for the small mine operator, to refuse to handle shipments on which price cutting is thought to be excessive.[14] However, the uniformity and stability of the published Lake Erie price should not be interpreted as proof of the complete absence of price flexibility and competition in the sale of iron ore. Competition is sometimes approached, if not actually achieved, by ore sales at quotations below the published price and by the somewhat more "gentlemanly" practice of sweetening the quality of the ore shipment.

The United States Steel Corporation faces a complex problem in the selection of a policy to follow in the Lake Erie iron ore market. The Corporation is clearly the dominant firm and price leader in the iron and steel industry.[15] It is also the dominant firm in the Lake Superior iron ore region in terms of yearly ore shipments and high-grade reserves. Until 1940 it followed a passive rôle in the Lake Erie ore market, mining its own needs without selling to firms outside of the Corporation family, and apparently without attempting to influence the determination of the Lake Erie price. However, with the steady depletion of the high-grade ore reserves in the Lake Superior region, the Corporation abandoned its policy of market isolation. It made ore available to its rivals through open-market sales by the Oliver Iron Mining Company, initially on a long-term contract basis and later by year-to-year sales. At first glance such policy seems highly paradoxical since it appears to be advantageous solely to the rivals of U.S. Steel. However, a number of factors undoubtedly encouraged the Corporation to adopt this policy. First, ore hardships on the part of U.S. Steel's rivals might be expected eventually to lead to Congressional criticism and possible antitrust action against the Corporation. Second, the heavy fixed charges in the form of taxes on unused reserves provided an economic incentive for the sale of the ore. Third, expiration of leases in the near future encouraged mining of ore at low royalty rates before higher rates were imposed in new leases, or in order to work out some of the "sunk" costs of opening the mine. Fourth, the sale of ore to rivals, rather than proving a competitive disadvantage, might afford a subtle but most effective means of influencing rival steel firms' policies. The selection of 1940 as the year to inaugurate open-market

[14] "Exhibit 1372," *ibid.*, p. 10442.

[15] See Joint Committee on the Economic Report, "December 1949 Steel Price Increases," *Hearings* (81st Congress, Second Session, January 1950), *passim;* and *ibid.*, *Report*, p. 18, *et seq.*

ore sales was dependent upon market conditions in the Lake Erie ore trade.[16] This year apparently presented the first opportunity since the depression for the Oliver Company to enlarge its production by selling ore in the open market without seriously endangering the market price of ore.

The Corporation also faces a problem in the selection of a pricing policy to follow in the Lake Erie iron ore market. Support of the highest possible price for iron ore is by no means an unmixed blessing for the Corporation. A high iron ore price encourages the development and exploitation of lower grade ore reserves and increases the use of scrap as raw material sources, both of which are less completely controlled by the Corporation than high-grade ore reserves. In addition, taxes levied on the Corporation's reserve ore holdings increase in direct proportion to increases in the price of iron ore. Thus if sales in the open market at the higher price are not large, the Corporation may receive only slight financial benefit from the higher ore price.[17]

Certain obvious advantages, however, accrue to the Corporation from the support of a high iron ore price. Although the Oliver Mining Company bills the iron and steel-producing subsidiaries of the Corporation for ore at a discount of the market price,[18] from the Corporation's standpoint this charge is primarily a bookkeeping cost. For rival

[16] SSMP, *Hearings*, Part 4-A, Serial 14, p. 531.

In a departure from its usual terse report that the Lake Erie base price had been established by an announcement of sales by one of the larger ore firms, the Cleveland *Plain Dealer* of April 17, 1940, carried the following news item:

> Pickands, Mather & Co., one of the largest operators in the iron ore trade, announced late yesterday several sales of the mineral for delivery during the present lake navigation season on the basis of $4.45 a gross ton delivered at Lake Erie ports for Mesabi non-Bessemer grade with guaranteed 51.50 per cent natural iron content. . . . Base price of $4.45 represents a reduction of 50 cents a ton from prices announced Jan. 3. . . . In recent months the iron ore trade has been somewhat disturbed, first by the TNEC . . . then by the decision by the United States Steel Corp. to enter the open market through its subsidiary, Oliver Mining Co. Oliver shortly afterward announced a sale to the Ford Motor Co. at a price which did not include transportation down the lakes. While the price unannounced was reported lower, the grade of ore covered by the order never was revealed.

It should be noted that the Ford purchase has been one of the critical early season sales, frequently threatening to establish the Lake Erie base price at a lower figure than had prevailed in the previous year. A surprising absence of comment in the industry's trade journals followed the Corporation's decision to sell ore in the open market.

[17] Minnesota property taxation is the most important in this respect since it is levied on the value of the ore reserves in the ground, with value assessment based on the published Lake Erie iron ore price. In 1948 the Oliver Iron Mining Company paid a total of nearly $18 million in taxes to Minnesota, of which half was general and personal property taxation. See "Iron Country," *Engineering & Mining Journal*, Vol. 150 (Aug. 1949), p. 114.

[18] In the nine-year period from 1941 to 1949, the Oliver Iron Mining Company billed the steel-producing subsidiaries at an average discount of 25 cents per ton below the published price. The highest discount was given in 1941 of 40 cents per ton and the lowest in 1944 of 15 cents per ton. For the past three years, the discount has been 30 cents per ton. "Exhibit S-214d," SSMP, *Exhibits*, Serial 14, Part 4-B, p. 497.

steel producers, however, the purchase of ore from non-affiliated ore concerns—such as the Oliver Company—constitutes an actual cost outlay. Thus, by supporting a high price for iron ore, the Corporation is in a position to maximize return at the raw material level while allowing rivals to flourish—within limits—in the sale of semi-finished and finished iron and steel products.[19] Command over a rival's source of raw material provides many of the advantages of monopoly control of the industry without some of the disadvantages of a cruder exercise of power. Thus, only an unusually courageous management is likely to pursue a policy which encroaches seriously on the product market of its raw material supplier, and the dominant supplier can look with relative indifference upon changes in the structure of the industry, secure in the knowledge that any serious threat to its supremacy can be checked by a change of policy at the raw material level.

[19] See SSMP, *Hearings,* Serial 14, Part 4-A, p. 633, and "Exhibit S-299," *Exhibits, ibid.,* p. 555.

COMMUNICATION

A Note on the Secular Consumption Function

This brief note involves two matters relating to the so-called secular upward drift of the consumption function. The first has to do with the chronology and early discussion of this problem; the second has to do with the question whether an S-curve which assumes the form of a straight line through the origin (*viz.*, a constant *ratio* of saving to income cyclically, or secularly, or both) is at variance with Keynesian theory.

Empirical evidence tends to support the view that *cyclically* the consumption-function curve crosses the 45° line, while *secularly* it is (quite probably) a straight line through the origin. Various theoretical analyses have, moreover, been made supporting these conclusions.[1] Taken together these conclusions suggest an upward secular drift of the cyclical or short-run consumption function.

My own first published statement relating to the secular function antedated the publication of Kuznets' long-run data.[2] It appeared in my chapter in *The Structure of the American Economy*, Part II, *"Toward Full Use of Resources,"* published in June, 1940, National Resources Planning Board, page 32. The statement follows:

> Cyclically, the percentage of income saved rises and falls as income rises and falls. If, however, one concentrates attention exclusively upon the rising secular trend in real income, there is no conclusive evidence that a higher *percentage* of income is saved now than formerly. But if we save the same percentage of income (at corresponding phases of the cycle) as in earlier periods, it follows that the *amount* saved is higher, since real incomes have risen.

It may perhaps be useful to say a word about the views (with respect to the cyclical and secular movements of consumption in relation to income) generally held by economists long before the appearance of Keynes' *General Theory*. First, everyone was aware of the fact that consumption had risen *secularly* more or less in proportion to the great increase in real income.[3] This

[1] See Hicks' discussion of the pros and cons in his *Trade Cycle*, Chapter III.

[2] Kuznets first presented his data before the University of Pennsylvania Conference of September 17, 1940.

[3] Innumerable references could easily be cited. In my *Economic Stabilization in an Unbalanced World* (1932) pp. 373-74, this matter is discussed very much along the lines of the effect of one's location on the Lorenz income distribution curve on the ratio of saving to income. Among other things relating to trends during the preceding century I said: "Real wages have tripled and quadrupled, yet the lower fringe of workers finds it as difficult as ever to escape destitution. . . . Every increase in real wages brought a corresponding increase in the requirements necessary for what was considered ordinary decency in a civilized country. . . . Higher real wages for the unskilled have not materially eased

opinion was strongly supported, not only by general observation, but by studies such as those by Bowley and Stamp. Second, it was a well-established fact in business-cycle literature that investment fluctuates percentage-wise more than income over the *cycle*. This means, of course, that *cyclically* consumption rises less rapidly proportionately than income during the boom years and falls less rapidly in depression. Here we have, then, a consumption-income relationship which looks very much like our familiar cyclical consumption function which crosses the 45° line.

Broadly speaking, economists have long been aware of the difference between the *cyclical* and the *secular* movements of consumption in relation to income. To this general knowledge, long and widely held, Keynes indeed added something very important, *viz.*, a precise formulation of the consumption-function concept, together with the correlative concepts—the marginal propensity to consume and the multiplier. Moreover, he advanced a *theory* in which this and other functions, relevant to the determination of aggregate demand are integrated. The earlier general knowledge and rather vague conceptions about the *cyclical* and *secular* behavior of consumption in relation to income did not supply a *theory*.

There is a second matter, to which I wish to make reference. Keynes was highly cautious in the formulation which he made of the functional relation of consumption to income. He did not say that consumption rises proportionally less rapidly than income. He emphasized again and again that his postulate was a very limited one, namely, that "when aggregate real income is increased aggregate consumption is increased, but not so by much as income" (*General Theory*, p. 27). In other words *some* part of an *increment* of income is saved. Thus, if in fact consumption always remained, *both cyclically and secularly*, a fixed percentage of income (*i.e.*, assumed the form of a straight line through the origin), this relationship would still conform to Keynes' law. While Keynes himself gave no special consideration to the secular aspects of the problem, it is nevertheless a fact that his formulation of the consumption function, *if applied secularly*, would be quite in conformity with Kuznets' long-run data.

If, however, it is believed (as indeed virtually all writers on the consumption function have believed) that consumption increases cyclically *proportionally* less than income, then it is simply a matter of common sense to suppose that there must be *some* upward shift *secularly* of the consumption function. This would, however, not mean that the percentage of income which is consumed necessarily remains rigidly constant over time. Indeed Kuznets' data reveal considerable variability and of course many factors could enter to

the difficulty of making both ends meet. Bowley and Stamp have shown that over long-run periods the percentage differential between different economic groups has not materially changed. As incomes rose all around, the whole manner of living changed. It was just as difficult as ever for the unskilled to keep up with the procession. . . . Every assimilated group strives to live somewhat like other people. Every level feels the pull of the standards of those just a step higher in the social scale. The lower the income, the more difficult it is to set aside any surplus above what is absolutely necessary in order to live according to minimum current standards."

change the ratio. But even a little reflection on the course of economic history is enough to disclose the unmistakable fact that consumption has risen, broadly conceived, *more or less* in proportion to the vast upsurge in real income which the last 150 years have witnessed.

The Kuznets' data were of great interest, but they were certainly not surprising. My own views, which were in conformity with his data, had already been published, as indicated above, some months earlier.[4] The apparent *secular* constancy in the *ratio* of consumption to income raises indeed interesting questions with respect to the factors which account for this constancy if indeed it be true; similarly the apparent decline in the ratio of consumption to income when income rises cyclically also raises highly interesting questions;[5] and finally the historical development of the cyclical and secular movements, and how these are related to each other, deserve extensive research. These problems have indeed been illuminated by the brilliant contributions of Samuelson, Modigliani, Dorothy Brady, Duesenberry, and others. Much more work needs to be done. Fortunately, economics neither began nor ended with the publication of the *General Theory*.

ALVIN H. HANSEN*

[4] I later discussed this matter in greater detail in my *Fiscal Policy and Business Cycles* (1941), pp. 231-34, where I made reference to the Kuznets data.

[5] Keynes had indeed something to say about this. But it was not, as we have seen, a part of his theory proper.

* The author is professor of economics at Harvard University.

BOOK REVIEWS

Economic Theory; General Economics

Keynes's "General Theory." By A. C. Pigou. (London and New York: Macmillan. 1950. Pp. viii, 69. 6*s*.)

The appearance of Professor Pigou's lectures on Keynes's *General Theory* is a notable event. Over the course of many years Professor Pigou has made his own contributions, which have enlarged and encircled the corpus of economic doctrine. Many of his findings in welfare economics, public finance and in certain departments of monetary theory have become part of the mental furniture of trained economists, and are likely long to remain so. To achieve his results, he used certain techniques of analysis, which were appropriate to his purposes. In the later part of his career a somewhat younger economist came forward offering new techniques of analysis for use by researchers. Those who find these new techniques helpful would by no means claim that they are appropriate or relevant to the whole field of economic investigation. It may well be that in many of the fields which Professor Pigou has cultivated the older sets of tools will continue to be deemed the most suitable. In these lectures Professor Pigou sets out to assess the worth of the new tools for their own specific purposes.

First, it must be said that Professor Pigou's book is steeped in a spirit of fine generosity towards his younger rival. He pays a notable tribute to Keynes's wide powers.[1] He pays tribute also to the value of some of Keynes's specific contributions and withdraws an important criticism made in an earlier notice. A reviewer might well wish to dwell with satisfaction on this appreciative essay, and not mar the happy harmony by fresh criticism. To do so would be to fail in proper respect for a work from Professor Pigou; anything from his pen calls for and deserves an attempt at rigorous criticism.

Keynes's work, like other systematic work in this field, comprises elements which can be challenged in different ways. First, there are the definitions of terms and the identical propositions entailed by those definitions. For instance, there are Keynes's definitions of saving and investment and the proposition that flows from those definitions that saving must always be equal to investment. In this Keynes departed from usage that was current in certain contemporary writings and, it is fair to add, in his own previous work. In the case of a good writer one cannot usually say that such definitions are wrong. He may, of course, have been careless and overlooked some phenomenon which ought to have been explicitly included or excluded in some general concept; an alleged identity may not indeed be so, on account of

[1] It may be worth drawing attention to the coincidence that at the conclusion of his lectures Professor Pigou selected for quotation the poem by Browning, two lines from which I had quite independently chosen to cite two years ago in writing my *Life of Keynes.*

such an oversight. In the main, however, the criterion of criticism will not be the correctness of the definition, but its utility. Definitions group together certain individually distinguishable phenomena by selecting points of similarity. The whole question is whether such groupings are illuminating and helpful to further research. Do they present the multifarious facts of our complicated economic life in forms which guide us to a better understanding?

Next we have certain functional relations, for instance, the proposition that the amount of consumption depends upon the size of income. These kinds of relations may be criticized not only from the point of view of their convenience as aids to thought, but also from that of their correspondence with the facts. Does the amount that a man consumes in fact at all depend on the size of his income? We may think that the answer to this question is obvious, but it must be asked. In economics the value of one variable usually depends on a number of other variables. The theorist may select one of the governing variables as being much more important than the others. A considerable part of Keynes's distinctive contribution consisted in doing precisely this. In certain cases he assumed that the influence of certain variables was so unimportant that they could for practical purposes be neglected. Of course we are bound to ask whether this ascription of the main importance to a particular variable corresponds with the facts of the case. Finally, a theorist may use his own tools to reach certain broad conclusions of general interest.

Now in the opening chapters Professor Pigou sets out some of Keynes's definitions and functional relations. In the central core of the book, which I take to be Chapters X-XIV, he considers the validity of certain conclusions that Keynes reached. In doing this he uses some of Keynes's definitions and functional relations as previously set out; but he uses others which Keynes certainly did not accept. The arguments of these sections appear to be so widely at variance with Keynes's views as to force one to conclude that what Professor Pigou is seeking to do in them is not to utilize or assess Keynes's functional relations, but to test whether Keynes's *conclusions* are correct by using his own entirely different theory of the functional relations involved.

This is an interesting enterprise. It is important, however, to emphasize that it is a strictly limited one. Professor Pigou's slim volume may appear to the reader to be purporting to assess the pith and essence of Keynes's *General Theory*. To those who attach great value to the *General Theory* its importance seems to lie much more in the tools of analysis that it provides than in certain widely popularized conclusions. Professor Pigou re-examines and assesses the conclusions by reference to certain functional relations which he considers valid; he thereby implicitly rejects the Keynesian relations, since the two sets (Pigovian and Keynesian) are not in all respects consistent with one another. But he does not explicitly challenge the more important Keynesian relations—except in one case to which I shall revert. I infer that this volume does not really grapple with what is most important in the *General Theory*.

I first draw one example from Professor Pigou's choice of concepts. All through his discussions of the reasons for certain conclusions, variations in

the "income velocity of money" play an important part. This is quite at variance with Keynes's view. Keynes observed (*General Theory*, p. 201) that "it is not always made clear whether the income velocity of money is defined as the ratio of Y to M or as the ratio of Y to M_1." (Y is income, M the total quantity of money and M_1 that part of the total quantity of money which serves the transactions and precautionary motives.) Keynes thought that the most convenient definition of income velocity of money is the ratio of Y to M_1 and held that in relation to all short-period changes, which are those that Professor Pigou is investigating, this income velocity may be regarded as constant. Consequently, if this is what Professor Pigou means by income velocity, his assumption that variations in it have important short-period causal effects is in conflict with Keynes's view. The ratio of Y to M was not a concept which Keynes deemed to be of any utility in the analysis of these subjects; like Fisher's price level, it was too much of an omnium gatherum; "the use of the term" (income velocity of money) "obscures, I think, the real character of the causation and has led to nothing but confusion" (*General Theory*, p. 299); in making it play a key part, therefore, Professor Pigou is not expounding Keynes, but in conflict with him. But he does not criticise Keynes's objection to income velocity nor defend his own use of it in this context.

In order to judge Professor Pigou's work it may be well to concentrate on two central sections, his discussion of liquidity preference and of the "supply schedule for investment." In both these sections he presents what appears to be a chain of causation, in the form a entails b, b entails c, c entails d, etc. In order to be quite sure that I was doing justice to Professor Pigou, I felt it necessary to consider very carefully whether the word entail was supposed to express causal relation. Was it possible, on the contrary, that when Professor Pigou said that a entailed b, all he meant was that a entailed a whole equilibrium position of which b was one element? To put the matter otherwise, might he with equal propriety and the same meaning have said that a entailed d, d entailed c, c entailed b? I rejected this possible interpretation for three reasons. In the first place it seemed that, had he meant this, he would have given the reader some kind of warning. The definite sequences that he gives do suggest that each term is deemed to be specifically causally related to the preceding one. His language is certainly unnatural, if he did not mean this. Sometimes he substitutes "Therefore" for "entails." Secondly, it struck me that, though in many cases where he says that a entails b, this is quite contrary to Keynes's view, yet it is often quite consistent with the older ways of thought that Keynes rejected. Thirdly—and this seemed decisive—Professor Pigou in recapitulating one of his chains in an abbreviated form, actually uses the word "causes" (on line 16 of p. 43.)

I now address myself to a particular causal chain. "In Keynes's scheme a lower liquidity preference schedule entails a larger income velocity of money" (p. 45). Keynes certainly did not hold that a lower liquidity preference schedule directly causes a larger income of velocity of money in either sense of income velocity. Furthermore, in Keynes's scheme a lower liquidity preference schedule does not *necessarily* entail a larger income velocity of

money by remote causation, although it probably does so. In Keynes's scheme a lower liquidity preference schedule directly causes a higher level of security prices. If the elasticity of the marginal efficiency of capital schedule happened to be zero—as it might be in a severe depression—there would be no further consequence, and the income velocity of money in both senses would remain unchanged.

It is important to dwell a little on this point. Keynes divided all liquidity (money) into two parts, designated M_1 and M_2, because he deemed that this helped to bring out certain truths relating to causation. In his view the liquidity preference which governs the size of M_1 is entirely consequential on the level of employment, prices or money wages. If therefore we assume a difference in liquidity preference as the starting point of a chain of causation, we must in "Keynes's scheme" assume that it is a difference of point of view among those holding M_2. Those who hold M_2 do so because they think that at the existing prices of securities it is wise to hold some part of their capital assets in the form of money. A spontaneous difference in liquidity preference can therefore have no other immediate consequence than a larger or smaller demand for alternative capital assets. Since neither the quantity of money in M_2 nor that of alternative capital assets is assumed to be different, the new point of view must lead to a different valuation in terms of money of existing capital assets.

Now it may be that Keynes's division of all holders of money into these two classes was wrong. It may be that a change of point of view can arise in the minds of some holders of money spontaneously—and *not* in consequence of a change of income, prices or wage-rates—which leads them to seek to exchange their money for goods that they intend to consume. I have no doubt that Keynes would have admitted this possibility, while arguing that it was not likely to be quantitatively important. If Professor Pigou wishes to argue that a change in liquidity preference entails (presumably as proximate cause) a change in the income velocity of money, it is incumbent on him to join issue with Keynes on his fundamental reasonings about why people hold money. He does not do so. I cannot see how the words "in Keynes's scheme" with which he prefixes the sentence quoted above can be justified.

I proceed to give Professor Pigou's chain on page 45 at length:

> In Keynes's scheme a lower liquidity preference schedule entails a larger income velocity of money; therefore more money income; therefore higher prices, and therefore, the money rate of wages being given, more employment. This extra employment, carrying with it extra income, as valued in labour, entails in turn a larger amount of investment supplied and engaged. . . . At the same time the extra employment and the lower rate of interest associated with it both make on the side of supply for larger consumption.

This is Professor Pigou's chain of causation. Keynes's would be as follows: A lower liquidity preference entails a higher level of security prices, that is, a lower rate of interest; therefore more investment (unless the elasticity of the marginal efficiency of capital schedule were zero) and probably more consumption (if the multiplier is greater than one); therefore more employment

and probably higher prices. On Keynes's definition of income velocity, there will be no difference in that, but there will be a higher ratio of Y to M. Thus Keynes's chain of causation is totally different. If Professor Pigou gets the same end result by his chain of causation, that still leaves the question open as to which chain of causation, if either, is correct. It is to be noticed that Keynes's reasoning does not depend, as Professor Pigou's does, on "the money rate of wages being given." The money rate of wages is not relevant, save that, if there happened simultaneously with a decrease of liquidity preference to be a sufficiently large autonomous rise of money wage-rates to offset it by draining money from M_2 into M_1 there would be higher prices but no increase of investment, consumption or employment (and no fall of employment).

I now take another passage (p. 39). Professor Pigou compares two situations, *a* and *b*, there being greater thriftiness in *a*, and purports to give "Keynes's scheme of thought."

> Since in respect of any given rate of interest and of employment the amount of investment supplied is larger in situation *a* than in situation *b*, for equilibrium, with the set-up I am using, the amount demanded and so the actual amount provided must also be larger. But, if the amount provided is larger, then the demand function being given the rate of interest must be lower. This entails that the income velocity of money and so money income must be smaller. This yet again entails that prices are lower and so, the money rate of wages being given, that employment is discouraged. In short, greater thriftiness carries with it a smaller total of employment.

The only similarity to Keynes's thought that I can find in this sequence is the end result. In the course of it Professor Pigou diverges from Keynes's thought in a most notable manner. By "the amount of investment supplied" he means what Keynes calls saving. Keynes's proposition that saving and investment must be equal to one another does not entail that the amount of investment "demanded" must be equal to saving. So long as we retain the assumption of Professor Pigou's first sentence that employment is not reduced by greater thriftiness, the amount of investment taking place will include stocks which cannot be sold, and it is rather odd to reckon these in the amount of investment "demanded." It is quite contrary to Keynes's thought to say, as though it were a matter of direct causation, that "if the amount provided is larger, then the demand function being given, the rate of interest must be lower." The large amount "provided" will not in itself tend to reduce the rate of interest, but will lead to unsold stocks and so to a reduction of income. This causes a transfer of money from the transactions and precautionary pool (M_1) to the speculative pool (M_2) and this—provided that the liquidity preference schedule is not of infinite elasticity, as it might in certain circumstances be—causes a fall in the rate of interest. It cannot, on Keynes's scheme of thought, be said that prices will be lower, without any reference to the marginal costs of production. Keynes tends to assume that with lower activity marginal costs will be somewhat lower, but this does not play any key part in his theory, nor in these circumstances does the fact that the money rate of wages is given.

Both these passages seem to me to show merely that in the two cases chosen for notice, Professor Pigou can, by using totally different concepts and theories of causation from those of Keynes, get the same end result as Keynes. I do not see that this can be taken to be more than a remarkable coincidence. We cannot infer that in other cases one would get the same end result by using Professor Pigou's theory of functional relations as one would get by using Keynes's. And what we are primarily interested in is not the end result but the theory itself.

In this chapter Professor Pigou advances a critcism of another end result of Keynes's theory, namely that *ceteris paribus* more thriftiness will, anyhow in the short period, entail less aggregate investment. Professor Pigou holds, I judge correctly, that Keynes can reach this conclusion only by assuming that investment is an increasing function of consumption. If the marginal efficiency of capital were quite unaffected by the current level of consumption, then, since on Keynes's theory as well as on Professor Pigou's theory, greater thriftiness would normally entail a lower rate of interest (the quantity of money being taken as fixed), there would with greater thriftiness be more investment. At first blush it might seem plausible to assume that investment is indeed an increasing function of income, but Professor Pigou, referring back to an earlier argument (p. 13), claims that this is not so. Since he is comparing two situations, one with less and the other with more thriftiness, and not considering the transition from one to the other, he can leave out of account any extra investment which may be due to the increase of consumption that occurs in the transition from one to the other. It is possible that Keynes was guilty of some confusion here. His mind was no doubt concentrated on the actual processes of fluctuation, and, thinking of a change of thriftiness, he would have his attention fixed on the increase or decrease of investment associated with the increase or decrease of consumption occurring during the change. Keynes may have been too hasty in jumping from the proposition that an increase of thriftiness would (with a constant rate of interest) tend immediately to reduce investment, to the conclusion that a continuingly more thrifty economy would have less investment.

On the other hand, Professor Pigou's conclusion is not decisive. The real truth of the matter is that this problem cannot be analysed with static concepts. It has long been recognised that the *General Theory* will not be completely coherent until it has been "dynamised." During the last fifteen years attempts have been made on both sides of the Atlantic to dynamise it. The trouble is that in static conditions there is no investment at all, so that it is quite idle to ask whether there is likely to be more or less investment in a more thrifty economy than in a less thrifty one. In order to gauge what the volume of investment in either situation would be, we have to specify what the factors of increase in the society are.

Looking at the matter in a rough-and-ready way, which is all that is possible in this place, we may well hold that Keynes rather than Professor Pigou is in the right. Let us suppose, for instance, that the sole factor of increase is improving technology and that its ambit is the whole of production. If owing to excessive thriftiness the economy continued to show non-frictional

unemployment at a level of, say, 20%, the new inventions would only have scope for application over 80% of the area in which they could be applied if the economy were fullly employed. The new investment due to the improved technology would be correspondingly circumscribed. This limitation of the range for incorporating new improvements might have a greater (negative) effect on total investment than the positive effect due to more potential improvements being brought within the range of payability, and therefore rendered practicable, by the lower rate of interest. If this were so, the greater thriftiness would *pro tanto* entail less investment.

If this review is correct in concluding that Professor Pigou's account of Keynes's theories is seriously at fault, it must not be inferred that Professor Pigou has been guilty of carelessness or failure to make an honest attempt to understand the *General Theory*. Keynes in his own life time found that his fellow economists could not bring themselves to believe that it was essential to his arguments to discard certain long-used concepts and assumptions regarding functional dependence, and that the validity of his work could only be judged by examining whether his rejections were correct. To ignore what may be called his methodological revolution and argue about his conclusions with the aid of some of the rejected methodological tools did not carry one forward. Professor Pigou's new book is an admirable example of this.

None the less it is an interesting book. If the reader approaches it not as an exposition of Keynes, but as an independent contribution to economic theory, he will find much that is instructive and valuable. Professor Pigou's outstanding powers of analysis are well displayed in many places and with their aid he is able to make important additions to our knowledge in this field.

R. F. HARROD

Christ Church,
Oxford

A Reconstruction of Economics. By KENNETH E. BOULDING. (New York: John Wiley. London: Chapman & Hall. 1950. Pp. xiv, 311; Figs. 85. $4.50.)

Here certainly we have a new departure, or even several new departures in economic analysis. It is perhaps too soon to tell how far they will represent the attainment of new milestones on the main path of economic thinking, and how far they are really bypaths. But even as bypaths, they represent interesting and invigorating mental exercise, and may even be suggestive of new ways by which progress can be made along the main road. Certainly no one interested in the frontiers of economic analysis and theory can afford to ignore this book.

The general theme of this book, carried through a number of otherwise largely unrelated segments of analysis, is that economic phenomena can profitably be considered primarily in terms of relationships between stocks or balance sheet items, and that flows can best be treated as changes in stocks. This is in contrast to the more traditional analysis in which flows first com-

mand attention, and stocks are merely the accumulation of past flows or the sources of future flows.

The book is in two parts, virtually independent, reflecting the chasm that still separates micro- from macroeconomics. The first part, dealing with microeconomics, centers around four main themes: Ecological equilibrium; a reorientation of preference theory through bringing in prices as new dimensions in indifference surfaces and at the same time setting up the "preferred asset ratio" as a simplifying first approximation; theories of risk; and a reexamination of the concept of consumption.

The first two chapters are devoted to a discourse on population theory and ecology in terms of the familiar "reaction curve" analysis. The result, however, is more of a formal illustration of the properties of the reaction curve analysis than it is a contribution to theory, and could well have been omitted entirely without any effect on the meaning of what follows.

Next, Professor Boulding attempts to break out of the traditional pattern of static economics in which consumers are supposed to be striving to achieve a preferred *process,* expressed in terms of maximizing the satisfaction derived per unit time from the flow of goods and services, while firms are supposed likewise to be maximizing profit per unit time. Instead, individuals and firms are supposed to be behaving in terms of attaining a preferred *situation* expressed in terms of assets and liabilities at a point in time, rather than in a flow of goods and services through time.

In the case of a business firm, assets are primarily marketable or potentially marketable. But in the case of the individual consumer, assets may also consist of states of mind, *e.g.*, the state of just having gone to the movies or states of physical health, *e.g.*, the state of just having had a good dinner. This somewhat novel point of view is elaborated in the section on consumption. Indeed there is considerable question whether, from a psychological point of view or even from an ethical or philosophical point of view it is better to consider the aims of economic activity as the achievement of a situation or the achievement of a process, and certainly this approach is worth some attention. One might perhaps say that one climbs Mt. Whitney largely for the sake of being later in a state of remembering it and being able to talk about it, and perhaps a good share of the satisfaction experienced in the act consists of the anticipation of this later state. On the other hand, it is a little more difficult to conceive of a lost week-end being undertaken for the sake of Monday's hangover and total absence of recollections. Perhaps we have here a new approach to the old idea of "pure" and "impure" satisfactions.

But however far we may go as a matter of philosophical speculation in reinterpreting human wants as wants for a state rather than wants for a process, tractability requires that the analysis deal primarily with observables, such as quantities of physical assets and their prices. In a flow theory of consumption, in which the goods and services consumed cannot thereafter be resold, it is possible to postulate for simplicity that prices of the goods and services do not affect the relative desirability of different consumption patterns. But this can hardly remain true of asset holdings, most of which will affect the "state" of the consumer (or firm) primarily through exchange,

actual or potential, rather than through direct use. Thus even though we could consider preferences among consumption patterns to be independent of prices at least as a first approximation, in the case of asset patterns, the rôle of anticipated prices, and of present prices which influence these anticipated prices, cannot as easily be ignored. A preference indicator for asset combinations, if it is to be at all serviceable, must therefore include prices as variables as well as the quantities of the assets. Even though, strictly speaking, it is price anticipations that influence preferences and not current prices, and even though one were to consider such anticipations as part of the ineluctable "tastes" of the individual, current prices of assets influence such "tastes" to a far greater extent and in a manner less likely to be eliminable as "irrational" than is the case for the analogous influence of price on the preference field for consumption patterns.

Introducing prices as variables in the usual indifference analysis of flows produces an intractably large number of degrees of freedom, and would here also, but Boulding introduces a further drastically simplifying assumption in the form of his "preferred asset-ratios." In effect, it is assumed that asset preferences are such that for any given market situation an individual will trade in such a way as to make the market value of the amount of each type of asset in the resulting portfolio equal to some preferred proportion of the total market value of his assets. For competitive markets, this implies demand, supply, and offer curves that are all equilateral hyperbolas, with asymptotes parallel to but not necessarily coinciding with the axes.

This assumption that, as a first approximation, we can assume adherence to the preferred asset-ratios has some relevance to institutional circumstances, if we note that banks and financial analysts often look at the balance sheet of a firm with an eye to seeing whether "accounts payable," "inventories," "fixed assets" and other similar categories of assets and liabilities bear a relationship that rough rules of thumb or some consensus of experience indicates to be proper for the industry in question. But these rules of thumb are applicable, if at all, only to relatively large categories of assets as aggregates. For more specific and detailed asset categories, it appears likely that constant preferred asset-ratios will hardly begin to give any reasonable approximation to reality. Thus, if the preferred asset-ratios are to be used at all they must be assumed to vary with relative prices, and we are back with so many degrees of freedom that anything can happen and the theory lacks positive significance. Thus, while the preferred asset-ratio concept is effectively used later by Boulding in the construction of his macroeconomic systems, serious difficulties confront its extensive use in microeconomics.

Indeed, as soon as price is introduced as a parameter of choice, either explicitly as a separate parameter or implicitly through the preferred asset ratio, nearly all connection with welfare economics is broken, and there appears to be no likelihood of developing from the new approach very much in the way of either normative or prescriptive economics. It seems almost impossible to justify any use of the preferences of individuals for marketable assets as a criterion for judging an economic system, in any manner comparable to the use of consumption-pattern indifference maps for this purpose.

To those who view welfare economics with distrust, this may be an advantage of the new method; to this reviewer, however, it is a major and almost fatal objection to it if it is proposed to use it as a basic rather than as merely a supplemental tool of analysis.

Nevertheless, Boulding does use the asset-indifference apparatus to produce some moderately significant new results: for example to distinguish the effect of a tax on production from that of a tax on sales, which may differ to the extent that inventory is accumulated. To be sure, this difference is likely to be merely a transitory phenomenon, since in the long run sales and production must be approximately equal if inventories are to be finite. These transitory phenomena, however, are precisely what may greatly influence the course of the macroeconomic system, and must not be slighted on that account. It is thus very useful to have a new tool adapted to their analysis.

Boulding next applies his analysis to the problem of risk, postulating (in a manner similar to that of Melvin Reder in *Studies in the Theory of Welfare Economics*) a preference field in the plane of which the expected value of assets and some measure of dispersion are the coordinates. Unfortunately, the analysis seems almost entirely a pure formalism without much in the way of concrete results as yet. In the ordinary indifference map, the coordinates at least are reasonably objective and observable quantities, in principle, even if not always in practice, while utility or preference is the only subjective element. With indifference maps of asset values, however, there are in typical situations no objective measures of expectation and range of values for a risky asset, and we are faced with a hypothetical relationship between three subjective parameters. This analysis does, however, have the advantage of couching the analysis explicitly in terms of asset preferences; too often in the analysis of risk, the time dimension is blurred and no analysis or justification is made of the transition from postulating a preference field in terms of flows to a preference field for stocks.

Boulding starts the macroeconomics section with a discourse on the dangers of forgetting that macroeconomic aggregates often conceal important elements of structure. There follows an interesting but highly artificial analysis of the dynamics of payment structures. Both of these discussions seem better as pedagogical material than as a contribution to knowledge; indeed in the payments analysis, it almost seems that the cart is drawing the horse: the analysis is in terms of "partial velocities" of individual firms and households, representing the ratio of a given type of outlay by a given unit in an accounting period to the unit's stock of money at the beginning of the accounting period. As a first approximation these partial velocities are assumed to be relatively stable, changes in money stocks producing a generally corresponding change in each specific type of outlay. As actual reactions to changes in money stocks are likely to be highly concentrated in some items, and even to involve action intended to change receipts instead of changing only outlays, this analysis will have to be made much more realistic if it is to serve as anything more than a teething ring, which limited end it may serve very well.

The most interesting, and suggestive, but perhaps precarious section is the last in which Boulding carries the analysis of macroeconomic identities to

new and perhaps extravagant lengths. The new superstructure, though it leads to very interesting and even startling conclusions, depends, in many crucial spots, on precisely the kind of structural constancy, stability of relationship, and absence of unanalyzed side effects that Boulding has been at pains to warn us of in the preceding section. Macroeconomics provides no automatic exorcism for the perennial bugbear of *ceteris paribus*.

One of the simplest examples of this is the "paradoxical" proposition that the more of its profits business distributes to households, the greater will be business profits, by an approximately like amount. This proposition is derived from an identity that sets up profits (V) as the sum of distributions (D) and increase in business net worth (dG_b), the latter being in turn made up of the increase in cash holdings of business (dM_b), the increase in the value of goods held by business (dQ_b), the increase in credit extended by business to households (dK_h), less the increase in loans from households to business (dK_h'): $V = D + dG_b = D + dM_b + dQ_b + dK_h - dK_h'$. By assuming that by some inherent stability all the items on the right side except D are determined or tend to restore themselves to some normal level, an increase in D is shown to bring about a like increase in V.

But alas for this nice, precise "widow's cruse" hypothesis, these other variables refuse to stay nicely put; indeed from the very beginning they are constrained to change. For a decision to increase distributions cannot be made in isolation: individual firms too are constrained by microeconomic identities. Individual firms must decide, if they are to increase distributions, whether this is to be by drawing down on balances, forgoing plant expansion, curtailing consumer credit, or borrowing. Which method is chosen may make all the difference in the result, and a proposed shift in behaviour is not completely specified until both of the balancing components have been indicated. When care is taken thus to specify both components, the member of the pair that is significant for the effect postulated may well prove not to be the one cited but rather the one left in the background. Thus a decision to increase dividends by cutting down cash balances may effect the equal increase in profits as predicted, provided, always, that households resist effectively an increase in their cash holdings and the monetary system fails to contract, thus frustrating the original intent of business as to their cash balances. But dividends paid in lieu of a construction program will hardly have the same result, and it looks as though it would be more satisfactory to attribute the increase in profits to the attempted reduction in money holdings than to the method adopted in a particular instance.

Nevertheless, some interesting new forms of analysis are developed with the aid of a concept termed the "Transfer Factor" (T) defined as increase in business cash (dM_b) plus distributions of profits (D) plus net increase in loans to households ($dK_h - dK_h'$). Roughly, it consists of net withdrawals from business adjusted for monetary shifts. Or in more nearly Keynesian terms, it can be considered as the excess of consumption out of profits over savings out of wages. With this concept as an element, Boulding builds models in which T is the strategic variable determining not only the total volume of output, but also the division of the product between wages and

profits (in a simplified two-factor world of labor and capital). It remains to be seen whether the transfer factor is a sufficiently useful entity, either by reason of its special stability or its special manipulability to justify its being given a prominent place in the kit of economic tools in view of the difficulties that many will experience in getting it clearly in mind as an entity and grasping the effects of various influences on its behaviour.

On the whole, this book is curiously tantalizing. New approaches and new techniques abound in it, that no brief review can do justice to. But most of them are too inadequately developed for the conclusions to be relied upon without further examination and detailed pursuit of all the implications and ramifications. One almost gets the feeling of looking at a series of designs of elegant bridges for which no foundations have yet been laid, nor details elaborated. Moreover, although theories are offered which challenge and displace the classical marginal productivity theories of distribution and the more standard analyses of the behaviour of consumers and firms, very little is offered either by way of linking up with, reconciliation with, or refutation of these older theories. New ideas thus so sketchily developed badly need the orientation, if not the support, derived from a clear relationship with the old. This book is thus a strong challenge to pick up where it leaves off and develop a sound and integrated structure along one or more of the lines indicated and to relate these structures to the existing body of economic theory. To those looking for ideas, it should prove invaluable. Those looking for conclusions would perhaps be well advised to proceed with caution, and classify it as "unfinished business" on the frontiers of knowledge.

William Vickrey

Columbia University

La Sintesi Economica e la Teoria del Reddito. By Gustavo del Vecchio. (Padua: Cedam. 1950. Pp. xxii, 436. L. 2000.)

The volume under review entitled "Economic Synthesis and Theory of Income" concludes a coherent cycle of Del Vecchio's scientific production, being the last volume of a lecture series on political economy preceded by three other volumes: "Lectures in Pure Economics" (1937, 4th ed.), "Applied Economics" consisting of "Dynamics" (1937, 2nd ed.), and "Economic Policies" (1937, 2nd ed.). Space is lacking here for a complete enumeration of G.D.V.'s other publications. However, we have to mention his standard work "Inquiry into the General Theory of Money" (Milan, 1933). The volume under review, although a synthesis of previous works, has neither the character of a fragment nor that of a complement, but forms an independent whole.

The traditional rigidity of a textbook is lacking in the exposition as well as in the sequence of thought. It contains precisely that not usually contained in a textbook. It is a kind of illuminating supplement to what is offered in the classroom—broadly ramifying into history of economic doctrines, sociology, philosophy—and is deeply anchored in methodology. One might best characterize it as a comparative methodology or a general epistemology of economics. It gives a subtle analysis of the living conditions of the theory,

of the specific atmosphere creative of its efficiency, and thus could be called a "Biology" of theory as a special branch of a general philosophy of economics. The author demonstrates how some new theoretical element penetrates the traditional body of theories and gradually decomposes the whole system; thus, a theory imperceptibly loses its explanatory value and emphasis is placed upon a new system of thought. The general pattern of this law of transition and the gradual substitution of one system of thought by a new one is exemplified by the antithesis of classical and Keynesian economics.

The first and second parts of the book are devoted to the historical development of the income aspect. An instructive by-product of this filiation of thought is to show that the development of economic theories is not only connected with authors of the Anglo-American realm of thought and their French or German derivatives, but with important and original contributions made by the Italians: Ferrara, Pareto and Pantaleoni. It goes without saying that in this historical sketch of the origin of the income theory, emphasis is placed upon Sismondi. In this filiation of doctrines one might begrudge the space devoted to such apparently devitalized discussions as that about material and immaterial goods, were it not for the delicately wrought arguments and counter-arguments which reflect in their subtle casuistry a metaphysical dualism revealing the predominance of immaterial factors and intangible equivalents such as "rights" or the "state" in the structure of typical German theories.

In Part 3 the author deals with the essential of economic synthesis. The whole elaboration of economic theory is shown as being functional to the concept of income. Keynes's "Janus"-face is illustrated by the following reasoning: The fact that Keynes considers the quantity of money as an independent variable assimilates him to the mercantilists; the consideration of nominal wage rates as independent variables, on the other hand, approximates him to the classics. Another classical element is Keynes's conception of the individual enterpriser as the ultimate decision-making entity. All the well-known Keynesian propensities and the rate of interest are determinants of the enterpriser psychology and of his decision to increase or decrease employment. The dynamic character of Keynesian thinking is contrasted with the static nature of the classical system—Ricardo's theory of rent being based upon the assumption of an enterpriser without profit. G.D.V. is, with Keynes, opposed to the classical bifurcation which separates the "monetary" from the "real" aspect of economic phenomena.

G.D.V.'s criticism of the classical system shows in a striking way how any injury to the vital nerve centers of a theory causes the gradual breakdown of the system. According to the classics, monopolies are considered as the result of deviations from the normal cost of production. The substitution of utility for cost deprived the theory of monopoly of its logical support, thus undermining the classical concept of monopoly (Part 4). International problems in their relation to income are discussed in Part 5.

Altogether, it is a synthesis of fascinating insights. One wonders, however, why the excellent chapter on Keynes placed in the historical part, does not include, in an introductory way, all the illuminating statements later made

by the author. Constructive criticism of Keynes is scattered all over the book; incorporated, "in different degrees of abstraction," into one chapter it would represent a global interpretation of Keynes, the logical consistency and methodological value of which could not be surpassed.

LOUISE SOMMER

Chicago, Illinois

Applied Economic Analysis. By F. M. BODDY, editor, and CHILDS, SMITH, BROWNLEE, COONS, and SALERA. (New York: Pitman. 1948. Pp. xvi, 573. $4.75.)

Applied Economic Analysis is a book written by six authors, each, to some extent at least, a specialist in his respective field. The reviewer has some difficulty in deciding where and at what level this work should be inserted into the economics curriculum. In the preface, it is observed that most universities give a two-semester course in Economic Principles and Problems and that this is designed for the second semester, or problems section of the course. However, it is doubtful if it could be successfully used in that way. Since each section is treated by a specialist, it is quite obvious that they have been giving major attention to complete courses in their own fields and are experiencing difficulty in condensing what they have to say and getting it down to the sophomore level, where students have had only one semester in principles or economic theory.

It is quite probable that this text would fit in better if inserted in the junior or senior year following a course in Intermediate Economic Theory. This observation is made because the work is definitely not pitched at the elementary level. It is a scholarly piece of work. Each man is well qualified to handle in an able manner the field of his specialization and certainly each one is more interested in an adequate presentation of his material than in the simplification necessary for elementary students.

Section I on *The Controls of an Economic System,* by Francis M. Boddy, is quite theoretical and some of the diagrams are decidedly complicated. It would appear that the author is assuming that students have more mathematical background and a greater capacity for analyzing geometric figures than the reviewer has found to be true. Furthermore, there is a tendency to over-stress *tools* of analysis rather than clarification of analysis. The viewpoint is well stated in the preface, where it says, "The authors believe that the major value of an elementary course in economics should lie not in furnishing the student with answers to economic problems, but rather in giving him a set of tools or techniques and showing him how to select those most applicable to the problem at hand." The word "tools" is used six times in the first page of the preface and there are times while reading Part I that one feels that there is more interest in the nature of the tool itself than in its application. When one attempts, as the author does, to analyze the intricacies of perfect competition and imperfect competition, it would appear that some of the complicated diagrams should be supplemented by more extended explanation.

Section II on the *Economics of Labor* is by Frank E. Childs, of the Univer-

sity of Minnesota. The major topics treated are labor markets, labor organization, and collective bargaining. On the whole, this section is very well done.

Section III on the *Economics of Marketing* is by Wendell R. Smith, of the University of Iowa. The treatment is fairly elementary and covers quite adequately both the marketing institutions and the marketing functions.

Section IV is on *Money, Credit, and Monetary Policy* by O. H. Brownlee, of the University of Chicago. Here, the author brings in a liberal amount of Keynesian economics, while dealing with such subjects as savings and investment, and the equilibrium levels of investment and employment.

Section V on *Public Finance and Fiscal Policy,* also by O. H. Brownlee, is almost wholly Keynesian in that one learns little about the fundamental canons of taxation or what constitutes a good tax or tax system but rather a devotion to fiscal policy as a means of providing full employment.

Section VI on *Agricultural Problems* is by Alvin E. Coons, of Ohio State University. This is a rather extended section, covering almost exactly one hundred pages. Great attention is given to parity for agriculture, farm income as related to other incomes, conservation, the tariff in its relation to agriculture, and the organization of the farm bloc. The author recognizes some of the sinister influences of pressure groups, but closes the chapter by saying "farm groups are no different, neither better nor worse (except in so far as the advantages they win become more far reaching), in their attempts to influence the total economy. No group has a monopoly on the economic virtues nor on the economic vices, whether it is made up of farmers, labor, businessmen, industrialists, or professional people."

The last section is on *International Trade* by Virgil Salera, formerly of Iowa State College. Mr. Salera demonstrates a very intimate knowledge both of factual background in international trade and also of the mechanism of international trade and the need for freeing world trade from a host of uneconomic restrictions. There is brief but clear treatment of the International Bank for Reconstruction and Development.

By way of a concluding statement, we may say that each author knows his field and has presented it clearly and concisely within the limits required by one book where each man can have only a segment rather than the opportunity to write a complete text. Each section carries a brief but well-selected bibliography for further study. There is an excellent index and many will find it a splendid book for ready reference, even if they cannot find a place for it in their own curriculum as a textbook.

H. L. McCracken

Louisiana State University

Economics of Business Enterprise: A Study of the Firm in the Aggregate Economy. By George J. Cady. (New York: Ronald Press. 1950. Pp. x, 452. $4.50.)

This book is a text in economic theory intended for college courses of intermediate grade. It is a welcome addition to a field already covered by such excellent texts as Bain, Boulding, Due, Enke, Stigler, and Weintraub.

Part I lays the introductory groundwork in four chapters outlining the plan of the book, discussing elementary notions of marginal analysis basic to an understanding of all firm operations, and using these notions for a general interpretation of firm costs as well as consumer demand. The typical U-shaped average cost curve of the individual firm is explained as a set of enveloping curves illustrating the large number of possible combinations of temporarily constant and variable productive agents. Demand for firm output is represented by five general types of sales curves illustrating the market situations of pure competition, simple monopoly, oligopoly, competitive monopoly and discriminatory pricing.

Part II provides a more detailed analysis of the firm as seller of one product. In describing different market situations, the author states as the "predominant pattern . . . one of artificially induced scarcities and heightened particular prices" (p. 80). While there can be little quarrel with the desirability of pointing up the widespread manifestation of restrictionism found in our economy, such statements would gain in perspective if they would include an appraisal of social alternatives in combining short-run stability for "vested interests" with the ideals of long-run competitive resource allocation. There is no reference to J. M. Clark's searching analysis of "workable competition."

Part III drops the assumptions of monoproduct operations, the motive of residual income maximization, and accurate predictability of the market. Multiproduct operations are analyzed under conditions of joint production and production of two or more goods in variable proportions, using revenue and cost indifference curves. Under the general heading of "entrepreneurial variants in control objectives" separation of ownership and control is discussed as it may affect entrepreneurial decisions. In this context, the author classifies various types of expectations and briefly examines the effect of uncertainty on entrepreneurial pricing and market organization: "Price agreement . . . is one of the most effective devices for interfirm handling of certain types of risk" (p. 183).

Part IV deals with the entrepreneur as buyer. The problems of wages, cost of materials, rent, interest, and profit are analyzed under a variety of market conditions. The chapter on labor uses some materials first developed by Dunlop in his *Wage Determination under Trade Unions*. Profit, as a net entrepreneurial residuum, "exerts an extremely important influence on the dynamics of firm and industry" (p. 254), though the author warns that a distinction must be drawn "between the profits of successful competitive innovation and the profits of firm and industrial collusive stabilization" (p. 359).

Part V is devoted to "aggregative considerations." An attempt is made here to explain economic disequilibrium in the aggregate economy on the basis of the foregoing analysis of the firm. "In general, monopoly results in fewer consumable goods and decreased per unit income for variable factors. It also places a strain on those flexible features in a price economy which must be counted on to ensure full employment . . . the business cycle bears a definite relation to the various inflexibilities associated with monopoly" (p. 363). In

a digression on economic policy, the author discusses the rôle of "enlightened and wise individuals," organized labor, organized consumers, organized business, and government. A concluding chapter on "What to Look for in an Economy of Firms" lists eighty principles which, it is claimed, "have been given a factual orientation" (p. 421). The nature of these principles is illustrated by the following quotes: Principle 3: "The most significant monetary flows take place through markets" (p. 422); Principle 50: "The prices of materials depend on the pattern of power and the precise nature of the dominant interest as exhibited in the market" (p. 427); Principle 75: "Crisis and depression may be interpreted fairly adequately in terms of innovation, new investment, liquidity preference, the interest rate, and the circular overflow of money" (p. 429).

To quote the author again, "there is a certain taint of futility about the type of economic analysis which starts and ends on the level of deductive abstraction" (p. 420). The student reading this book cannot but be struck with this futility. In spite of frequent assertions that "theory . . . shall be capable of application to practical affairs" (p. vi), it must be singularly difficult for the student to find a convincing answer to his question, "What use is price theory?" While the traditional framework of value theory is used to show how monopoly results in fewer consumable goods and decreased per unit income, the student is reassured with the *non sequitur* statement that "organized labor and organized business can make significant contributions to the elimination of restrictionism" (p. 429). There is no indication how price analysis could contribute to the strategy of direct control in economic mobilization, a question asked by thoughtful students at this time. Though it is emphasized that "quantitative considerations underlie all firm operations" (p. 3), no reference is made to the possibility of developing statistical cost and demand functions. And while the book is called "A Study of the Firm in the Aggregate Economy," no mention is made of the various explicit models which have been constructed to facilitate our understanding of how the individual firm and industry relate to the net and gross aggregates of the nation. The student will not find a discussion of the business sector in the nation's economic budget. He will not find the empirical application of equilibrium analysis attempted in current input-output studies. Neither will he learn anything about methods and techniques of statistical inference to measure relationships describing economic behavior, techniques which determine the logical basis of quantitative economic study.

These critical comments should not detract from the genuine merits of the book which has drawn material from a wide number of sources. The book is profusely illustrated with geometric diagrams which add to the presentation. There is also a very helpful bibliography divided into three parts: economic theory, case evidence, and court decisions. The criticism primarily reflects general misgivings about the present state of micro-economics where we face so serious problems of relating the formal analysis to realistic studies and where recent refinements have widened rather than narrowed the gap that separates theory and research. If modern theory of the business firm is to become more useful in solving problems of economic policy, it must give up

the fruitless search for a photographic "reality" of assumptions and rather concentrate on formulating hypotheses of strategic relevance for policy making in the world we live in. These hypotheses can be tested only by comparing their implications and predictions with statistical observations. The latter has been done somewhat more successfully in the field of macroeconomics, a fact that may explain the greater appeal of the income approach.

As Mr. Stigler says in the preface to his *Theory of Price:* "In short, economics is in an unsatisfactory state—it is hard to write a textbook!"

WERNER HOCHWALD

Washington University

Elementary Economics. By J. A. NORDIN and VIRGIL SALERA. (New York: Prentice-Hall. 1950. Pp. xvi, 844. $4.50.)

Professors Nordin and Salera have written a text which touches on nearly all subjects in current economics while treating each from the point of view of contemporary economic issues and economic policy. In aiming at current issues they have gone so far as to assume "that a problem is important for economists only if it is important to the voters or their representatives" (p. viii). At the same time the authors "have not knowingly made any value judgements" (p. viii), conceiving the economist's job as that of making "objective" analyses, on the basis of which the voters can choose policies. A minor criticism might be that the authors' judgements of what the voters want seem frequently confused with what pressure groups have obtained, and frequently sound like what academic economists who are politically somewhere in the middle of the road might want.

The text is truly a survey of economics, if by "economics" we mean that which is taught in college economics courses. After an introductory discussion of the relation of economic analysis to political democracy, the authors devote two chapters to description of the American economy. There follow brief treatments of national income, money and price theory, and a description of consumption and distribution patterns. Parts I and II are thus something of a survey of surveys. Part III, entitled the Behavior of Economic Units, describes in more detail banks, labor unions, family units, legal forms of the firm and deals in several chapters with price and output theory of the individual firm. These chapters, in their attempt to make firm theory convincing to elementary students, are among the best I have seen anywhere. The relations between fixed and variable factors, marginal productivity and marginal costs, for instance, follow from the information on the results of fertilizer use which Mr. Romain, a Maine potato farmer, has received from his experiment station. Part IV is on distribution analysis, and after a first chapter on labor law, treats of distribution under the conventional headings of wages, rent, interest and profits. Part V is entitled Business Fluctuations and Stabilization Policies, but the content is broader than the title suggests. The rôle of government, public finance, social security and agricultural problems all get separate chapters. Then there is a more detailed discussion of the determination of national income with a discussion of policies for stabilization. Part

VI on government regulation of business has chapters on agriculture, anti-trust action, public utilities, transportation and wartime policies. Part VII deals with international trade and finance, and includes chapters on exchange control and international institutions, while a somewhat sketchy Part VIII covers communism, fascism, socialism and economic planning.

By the reviewer's count the authors treat no less than eleven subjects which in many American colleges are accorded separate courses at the undergraduate level. At the same time, they develop all these in terms of what the student would need to know to evaluate political programs in terms of the student's own value judgements. This is a large order, yet it is not far out of line with recent discussions on the goals of undergraduate teaching. When these goals are attempted in a single text, the problem becomes even more difficult. Professors Nordin and Salera have, in the reviewer's opinion, done a competent job. The style, while not sparkling, is superior to most elementary texts.

Certain costs are involved in such an attempt. The treatment, as might be expected, is scarcely rigorous. In the analysis of national income, equilibrium is said to exist when "business firms of all kinds continue to receive, period after period, the same total receipts as they are paying out net to the owners of resources" (p. 497) while the analytically correct statement in terms of planned and realized investment is only hinted at in a later chapter (p. 506). The able student will be confused by the identification of national income and product at one place (pp. 59-62), while at another he is told that deflation exists "when the flow of money incomes is smaller than the flow of goods and services available to consumers at existing prices" (p. 118). The distinction between value judgements and analysis becomes blurred at times despite the authors' good intentions; or at least if they are not making value judgements, neither do they show from what value judgements some of their policies proceed.

These examples, which could be multiplied, are not intended so much as criticism of the authors' execution, as to point out the costs of their comprehensive goals. It is possible that students who thrive on logical rigor—an aptitude of great usefulness in large portions of current economics—will be repelled by the loose formulations involved in such a program. The difficulty is inherent in the "survey" type of elementary economics course. Economics contains large portions of logical analysis, and there is clearly no way of "surveying" a logical argument. If any step is left out, the conclusion simply doesn't follow. Probably most students leave an elementary economics course not understanding, for example, how saving and investment determine national income so much as believing such because of sufficient reiteration and exhortation.

Probably many teachers would agree with Professors Nordin and Salera that economics can be "sold" to students on the grounds that it provides them with indispensable means of formulating economic policies based on their own value judgements. Yet the unfavorable reaction which many students have to economics courses is, doubtless, in part due to buyer disappointment at non-delivery. Any intelligent student is at least vaguely aware

that for practically any economic policy some economist sporting a Ph.D. can be found who will be against it, while another is available who will be for it. And he is doubtful if such a vast collection of opinions is purely the result of conflicting value judgements. The reviewer believes that early in the elementary economics course we should emphasize the slightly discordant note of the (bare) majority report of one of the Association's subcommittees "that much of the dissatisfaction with the teaching of economics arises from the fact that there is so little economics to teach."[1] Having made this clear we might then appeal to the student's intellectual curiosity by rigorous analysis, on the one hand, and careful attention to the known empirical content of items such as the marginal revenue curve or the propensity to consume, on the other. Such a program may have less boxoffice appeal, but it might produce fewer dissatisfied students. After all, if bees are studied for other reasons than their productivity in honey, and if students of nuclear physics are not only moved by an urge to install more horsepower in American industry, there is no reason why human behavior should not arouse Veblen's "idle curiosity."

Donald F. Gordon

University of Washington

[1] This *Review*, Vol. XL, No. 5, Part 2, Supplement (December, 1950), p. 102.

Readings in Economic Analysis. Vol. I, *General Theory;* Vol. II, *Prices and Production.* Edited by Richard V. Clemence. (Cambridge: Addison-Wesley Press. Pp. xi, 283; xi, 259. $3.00, each volume.)

This set of readings is a praiseworthy attempt to provide undergraduates—presumably upperclassmen—with something more than the aridities of most of the texts in intermediate theory. With one exception[1] the two volumes consist exclusively of articles reproduced from the scholarly journals. The articles are almost entirely contemporary. The earliest is Taussig on "Capital, Interest and Diminishing Returns" (1908). There are three articles dating from the 'twenties,[2] but all the rest originally appeared in the 'thirties and 'forties.

With the exception of a brief introduction to each volume, there is no editorial comment. Practically all the articles are reproduced unchanged, and they are reproduced photographically, so that not only is their content undistorted, but their format is reminiscent of the matrix from which they were abstracted.

The first volume is entitled *General Theory,* and although it leads inevitably into the great Keynesian debate, the term is not restricted to its Keynesian interpretation. The book opens with two papers on methodology: Harrod on scope and method and Leontief on "implicit theorizing." Buchanan

[1] Schumpeter, "The Nature and Necessity of a Price System," from *Economic Reconstruction* (New York, Columbia University Press, 1934).

[2] A. A. Young, *Increasing Returns and Economic Progress* (1928), Taussig, *Is Market Price Determinate?* (1921), and Sraffa, *The Laws of Returns under Competitive Conditions* (1926).

on the cobweb theorem and Bergson on welfare economics lead, somewhat indirectly, to two papers on the laws of return by Taussig and Young, respectively. Schumpeter on the instability of capitalism precedes, although hardly introduces, Robbins and Samuelson on statics, while Keynes on declining population appropriately leads into Tarshis' exposition of the *General Theory,* appraisals by Williams and Schumpeter and discussions of effective demand and employment by Kaldor, Bennion and Klein.

Volume II is entitled *Prices and Production,* but too much weight should not be assigned the title of either volume, at least as factors determining into which one any given article is to be placed. It opens with Schumpeter on the price system, immediately followed by Viner's famous article on "Cost Curves and Supply Curves" to which its author has prepared an interesting supplement which appears here for the first time in print.[3]

Taussig on the determinateness of market prices, and Sraffa and Chamberlin on the laws of return precede four articles from the Lester-Machlup controversy over marginalism. Cost functions are discussed by Hansen, Eiteman and Apel, Efroymson's article on kinked demand curves is reproduced, Buchanan discusses advertising expenditures, and the volume concludes with Reder's reconsideration of marginal productivity.

If the extreme sketchiness of the foregoing summary has not obscured identification, the reader will recognize the high proportion of well-known articles among those reproduced. Few younger economists, and very few if any graduate students, possess files of the standard journals for the past twenty years, so that convenience of possession, to say nothing of freedom of annotation, are sufficient warrant for this venture. But since the set is designed primarily for undergraduate instruction, this particular usefulness can be described as one of those by-products which, to some consumers, justify the manufacture of the main product.

That main product, in this case, has substantial merits and only one, completely inescapable, defect. Its outstanding merit is the possibility it affords of confronting students at first hand with what economists say and do. A secondary merit is mentioned by the editor: "It is a source of some satisfaction to students to discover that they can understand the sort of articles that professional economists read" (Vol. II, p. ix). Perhaps the comment should be made that only one of the reproduced articles[4] depends upon that mathematical symbolism so terrifying to so many. The book does, however, contain plenty of good hard reading which will require very close attention indeed, but it is the meat rather than the mien which is formidable, and that probably is pedagogically wise. A third, and substantial, merit is the exposure of students to controversy. It is one thing for a textbook to

[3] The purport of this supplement is to place the analysis into the context of the general rather than the Marshallian partial equilibrium, and it leads to the conclusion that there is "a universal long-run 'law' of increasing money costs as output changes in response to shifts in wants in an economy of constant national money income" (Vol. II, p. 34), *after* the point is reached where technological economies of scale in the plant have been exhausted.

[4] A. Bergson (A. Burk), *A Reformulation of Certain Aspects of Welfare Economics* (1938).

summarize, or even allude to, controversy—and not all do; it is quite another, and immeasurably more valuable, to confront students directly with the issues at which professional economists are tugging.

The book's inescapable defect is inherent in the fact of selection. No two economists are ever likely to agree (a) that the selections made are necessarily the most useful or appropriate, or (b) that the themes selected—or omitted—serve the most desirable purposes. This reviewer, for example, would like to see included such themes as monopolistic competition and income distribution (both of which, at any rate since Marshall, are subsumed within the price system), and he is not convinced that the treatment of price is really meaningful apart from consideration of the theory of money. That is a defect to the reviewer; but as he can hardly expect others to draw the line between things in heaven and earth and the philosophy of Horatio exactly where he does, there is little more that can be appropriately said.

George P. Adams, Jr.

Cornell University

Basic Economics: A Book of Readings. Edited by Arthur D. Gayer, C. Lowell Harriss and Milton H. Spencer. (New York: Prentice-Hall. 1951. Pp. xv, 624. $2.95.)

This compact little volume consists of 116 excerpts from articles, laws, encyclicals and other significant sources of economic material. It is aimed at the beginning student of economics and is designed to accompany and supplement whatever basic textbook may be in use. To facilitate this the editors and publishers are preparing cross-references to some of the major elementary texts in current use.

The book is divided into fourteen sections, by topics, and the allocation of space to each topic is reported as being in rough conformity with that of some of the chief textbooks. The list of topics and the space given each Part follows: I, Nature and Method of Economics, 16 pages; II, Industry and Agriculture, 40 pages; III, Consumer Problems, 19 pages; IV, Price and Cost Analysis, 86 pages; V, Competition and Monopoly, 65 pages; VI, Income Distribution, 44 pages; VII, Labor Problems, 48 pages; VIII, Population and Social Welfare, 44 pages; IX, Monetary Economics and Finance, 49 pages; X, National Income and Economic Growth, 27 pages; XI, Business Cycles and Employment, 42 pages; XII, Public Finance and Fiscal Policy, 47 pages; XIII, International Economics, 63 pages; XIV, Economic Idealogies and Planning, 52 pages.

An extraordinary variety of sources has been searched for material to whet the appetites, deepen the understanding and possibly even to open the mouths of freshmen and sophomores. Among the great names represented are Aristotle, Smith, Ricardo, Malthus, Marshall and Veblen. Keynes, Boulding, Duesenberry, Stigler, Mitchell and Viner appear among the contributors who are contemporary or near-contemporary. From outside the profession the editors have drawn, among others, upon Jonathan Swift (on

taxation in Laputa), Pope Leo XIII (*Rerum Novarum*), and President Truman (on Point Four). Some of the institutions, committees and organizations represented are Consumers' Research; the American Medical Association; Merrill Lynch, Pierce, Fenner & Beane; and the plaintive commentary on loaded words in the 1949 *Minority Report of the Joint Committee on the Economic Report of the President*. The hand of the legal draftsman is shown in the form of excerpts from the British Combinations Act of 1799, the United States Anti-Trust Laws and the Taft-Hartley Act. Among the more interesting or unusual selections are Bastiat's famous *Petition of the Candlemakers*, John McDonald on *Economics and the Theory of Games* and R. A. Radford's analysis (that should be better known in this country) of the cigarette standard in a German prisoner-of-war camp, which should clinch the point that there are such things as monetary principles.

All the material is clear, and in its context all should be found interesting. Controversial material appears where it belongs, and without any effort either to play it up or to minimize it. Most items have been heavily cut, probably for the purpose of bringing out single points as well as to conserve space, but the result in many cases is to foster an illusion of nonexistent simplicity. Editorial comment is limited to an identifying sentence or two at the beginning of each selection.

On balance, the items chosen have been well-handled, and the book should be fun to teach. It must, also, have been fun to compile.

GEORGE P. ADAMS, JR.

Cornell University

Grondslagen en Techniek van de Marktanalyse. (Fundamentals and Techniques of Market Analysis) By P. J. VERDOORN (Leiden: H. E. Stenfert Kroese's Uitgevers-Maatschappij N.V. 1950. Pp. xi, 667.)

Economists are sometimes reluctant to undertake empirical research because of its inherent difficulties and often unrewarding results. Dr. Verdoorn's book is an antidote for this reluctance. In a volume useful to both the economist and the market analyst, he offers instruction in the fundamentals and techniques of studying markets.

After a brief introduction in which he includes an evaluation of the rôle of market analysis in business, government, and the development of economics, Dr. Verdoorn turns his attention to the definition of a market. Here he demonstrates the importance of careful limitation of the market to be investigated and suggests statistical methods that may be employed in this task. Next, he discusses factors to be considered in determining the character of the market and its changes. He follows this with a chapter on the techniques available for making studies of a particular aspects of markets. Dr. Verdoorn then examines some of the problems connected with certain types of market analysis such as the allotment of import quotas and the study of export markets, and presents a number of case studies to illustrate the techniques he has described.

From the viewpoint of the economist, this book is interesting. Here is

market research described in familiar terms. The relevancy of economics stands out clearly. Dr. Verdoorn's book should do much to encourage economists to participate in the gathering and analysis of the factual data so necessary to progress in economic theory.

WYTZE GORTER

University of California, Los Angeles

Economic History; National Economics

The Growth of English Society—A Short Economic History. By E. LIPSON. (New York: Henry Holt. 1950. Pp. ix, 467. $3.75.)

This volume is an expanded and revised version of the author's earlier *A Planned Economy or Free Enterprise*. Its title may have less sales appeal, but it has gained much in the revision. Mr. Lipson has added breadth and depth as well as length to his examination of the rôle of state planning versus individualistic enterprise in English history. His position is more closely reasoned, his treatment tighter-knit, and although some of the freshness of the first effort is lacking in the second, its painstaking scholarship makes it a much more satisfying piece of work. Its publication will call for extensive reworking of many of the texts in English economic history now in use.

The whole course of English economic history comes under review in this straightforward narrative. In the thousand years following the fifth century, the freedom of the tribesman gave way to servitude, and it was only with the disappearance of villeinage that the original freedom of the English village was restored. The author traces the growth of individualism, first centered in the commercial town, and examines in detail its implication for all aspects of medieval economic organization. This growth is accounted for by the expansion of the market at whose center stands the ubiquitous entrepreneur "the architect of the new England," who was to win for England its preëminence in the nineteenth century. In the mercantilist period he could make headway only within the framework of corporate society and in opposition to the state whose authority, backed by tradition, was directed to control of new and disruptive forces. Mercantilism, in this sense, is seen as England's first planned economy, one planned in the interests of self-sufficiency, balance and order. The issue of Crown versus entrepreneur, stability versus change, was fought out in the sixteenth and seventeenth centuries; individualism won, and much of the book is taken up with the explanation of its victory. For planning, the game was up by 1660, and from the Civil War to the beginning of the nineteenth century, freedom took over in English economic life, its foundations laid in England's first planning period. And it was in this period of unshackled entrepreneurship that the bases for England's industrial supremacy were laid. The mistakes of exaggerated individualism in turn led directly to the revival of mercantilist policies, to state control in the economic order in the interests of the old ideals of social harmony and justice. The nineteenth century is viewed as,

". . . an age in which the fabric of economic life was being reconstructed in preparation for an era that was to dawn in the twentieth century—the almost limitless extension of state functions into every sphere of the national economy" (p. 280).

This outline fails to do justice to the book's wealth of detail and its success in putting right many mistaken notions about the course of economic change in England. No feature of the economic life of the English people is overlooked, and the whole treatment follows a consistent pattern in which every cause and consequence is shown in its relation to the main theme of stability versus progress. The main elements in this pattern are underlined throughout and their significance reiterated almost to the point of tedium. History is an essentially continuous process, each system contains within itself the seeds of its decay, each stage in change paves the way for the next. Moreover, history's course may be likened to that of pendulum swings from one extreme (order and planning) to another (individualism and progress), a process of action and reaction, and the ideal position is the middleground, the compromise between such extremes. And because there is nothing really new under the sun and what appears to be new problems are old ones in a different guise, the historian can make a useful contribution to the discussion of current issues. The argument stands as a sober and balanced, if not new, defense of the "utility" of history.

In his search for parallels, Mr. Lipson has settled many questions and raised as many new ones. Use of expressions such as "the inevitable product of economic forces," the "normal course of change," may be overlooked, but the assumption of "inevitable" cycles, of the absence of historical novelty, is less easy to accept. "Planning" and "free enterprise" are big words, useful in general discussion but full of pitfalls in interpretive work. In the book *A Planned Economy or Free Enterprise,* private enterprise is taken as synonymous with individualism (another difficult word), free enterprise is based on the competitive pricing system, and planning is central direction of national resources. For purposes of historical narrative these terms may be accepted at their face value. It is where comparisons are made, of time or place, that difficulties emerge. The "planning" of sixteenth and seventeenth mercantilist England is of a very different order from the "planning" of England of the twentieth century, the modern state itself is highly unlike that of the earlier period, the conditions under which the "individual" operates in economic affairs display differences more pronounced than any discernible similarities, and the "entrepreneur" badly needs redefinition in each historical context. It is only by the broad use of terms that parallels may be found at all, and this very breadth obscures differences of which the author himself is well aware. And there is the further difficulty that generalizations based on the experience of a nation so unique in its environment of economic activity as England have made for distortions in the treatment of the national histories of other areas. For the reviewer, at least, the contributions in Mr. Lipson's work lie in the light thrown on various epochs in English history. References to cycles and parallels appear mainly as frills which add

little to and detract as little from this admirable and basically traditional history of the economic life of the English people. The volume has an index but lacks a bibliography.

W. T. EASTERBROOK

University of Toronto

Report to the President of the United States. By the Economic Survey Mission to the Philippines. Pub. 4010, Far Eastern Ser., 38. (Washington: Department of State. 1950. Pp. ii, 107.)

In response to the request of President Quirino of the Philippines, President Truman designated an economic mission to survey all aspects of the Philippine economy and to recommend measures that would enable the Islands to become and remain self-supporting.The Economic Survey Mission to the Philippines, which was headed by Daniel W. Bell (former Under Secretary of the Treasury) consisted of 5 members and 18 advisers drawn principally from United States government agencies, private business, and universities. The Mission submitted its report to the President in October, 1950 shortly after completing two months of intensive study in the Philippines.

The Bell Mission reports forthrightly on a long series of the Islands' basic economic and social ills: Inefficient and inadequate production; very low incomes, particularly in agriculture; a feudal land organization; unequal bargaining power of workers and tenants in dealing with employers and landowners; a tax system which bears too heavily on the poor and too lightly on the rich; over-reliance on exports of a few basic agricultural crops which provide but a meager livelihood for most of those engaged in their production; undue dependence on imports for many basic necessities that could readily be produced in the Islands; widespread inefficiency and even corruption in government service; and general disregard of leaders in agriculture and in business for their responsibility to improve the economic position of the lower-income groups.

The report intimates that the exceptional economic opportunities which the Philippines had to rehabilitate its war-torn economy and to transform it into one capable of supporting the newly sovereign state, were largely dissipated. By 1950, economic deterioration had reached the stage of crisis with no prospect of self correction. The mounting budgetary deficit was feeding a sharp inflation; the cash position of the Treasury was steadily worsening; capital was seeking haven outside the Philippines; and dollar exchange was being squandered on imports of luxuries.

The Bell Mission prescribed seven major corrective measures: (1) Imposition of sharply increased tax revenues, with proportionately greater levies to be assessed against high incomes and large property holdings; (2) expansion and improvement of agricultural production; land reform; and assistance of various kinds to small farmers; (3) diversification and expansion of industry; extension and improvement of transportation facilities; and estab-

lishment of a development corporation to coordinate the Islands' industrial program; (4) imposition of a special emergency tax of 25 per cent to be levied for not more than two years on all imports except rice, corn, flour, canned fish, canned milk, and fertilizer; (5) adoption of adequate programs in public health, education, and housing; promotion of trade unions; correction of various predatory employment practices; and establishment of a minimum wage for agricultural and other workers; (6) reorganization and improvement of public administration; higher salaries for civil servants; elimination of barriers to the employment of foreign technicians; and dispatch of a United States Technical Mission to assist the Philippine government in carrying out the various programs recommended by the Bell Mission; and (7) provision by the United States of $250 million through loans and grants to help in carrying out a five-year program of economic development and technical assistance, such aid to be strictly conditioned on steps being taken by the Philippine government to carry out the foregoing recommendations and, further, to be subject to continued supervision and control of the Technical Mission.

The Bell Mission follows its recommendations with this admonishment: "No one must expect that even so comprehensive a program as this will quickly or automatically remove all the ills of the Philippine economy. What it can do is to provide an environment in which people of the Philippines can work out a reasonable solution of their problems. What they ultimately achieve will be determined primarily by their own efforts and by the devotion of the Philippine Government to the interests of all the people. . . ."

The general diagnosis of basic Philippine ills reported by the Bell Mission does not differ materially from diagnoses found in earlier official and unofficial reports on the Philippine economy of which there have been at least several. There is also a marked general resemblance in many of the prescribed remedies. The Bell Report, however, does not—possibly for tactical reasons—call attention to the economic implications of the failure of the Islands to check its growth of population. There are now about 25 per cent more people in the Philippines than there were only 10 years ago.

As might have been expected from the short time available for preparation of the report and from the controversial nature of the subject with which it deals, some of the recommendations of the report are open to question.

The Philippines quite obviously needed to curtail its imports but the report does not make clear why the best method to achieve this objective is a "special emergency tax of 25 percent" for not less than two years on all imports "other than rice, corn, flour, canned fish, canned milk, and fertilizer." Even if this were the type of tax which would be the best on economic grounds (a premise which is at least debatable), the Mission might have been expected to foresee—as has turned out to be the case—that our own government would not accept it.

The recommended rate of import tax and recommended period of application were presumably based on the Islands' prospective balance-of-payments

position, on which the report prognosticated as follows (p. 38): "While the volume of exports will probably recover to the prewar level . . . the payments difficulties cannot be met by the moderate expansion of exports that can take place in the next few years. . . . On the basis of present prospects . . . United States Government disbursements . . . in 1951 . . . may drop by more than 50 per cent below the 1949 level. This is an anticipated fall of $180 million annually. No likely expansion of exports, nor rise in export prices, can offset the effect on foreign exchange receipts of this drop." On the basis of the "International Financial Statistics" reported by the International Monetary Fund, however, Philippine exports in the first four months of 1951 were at the rate of $492 million per year. This, $232 million higher than the rate realized in 1949 and $200 million above the rate forecast by the Bell Mission for 1951, is more than sufficient to offset the estimated $180 million decline in United States government disbursements.

The Bell report is not clear on whether the emergency tax of 25 per cent on imports is proposed in lieu of other import taxes or in addition to them. A tax of only 25 per cent is hardly high enough to discourage imports of many luxuries and non-essential articles and it would prove unduly burdensome on imports of many of the articles essential for ordinary consumption and for reconstruction. A considerable range of food staples, medical supplies, school books and equipment for industry, for example, might well have been added to the list of six products for which exemption from the tax was proposed.

Although the Philippines might well profit from carrying out most of the Bell Mission's general recommendations—particularly heeding the advice of the Technical Mission during the next five years—it should not regard the Bell Report as a blueprint of such unqualified merit that local architects should demur from making even extensive departures from it.

BEN DORFMAN

Washington, D.C.

Monetary Problems of an Export Economy—the Cuban Experience 1914-1947. By HENRY C. WALLICH. (Cambridge: Harvard University Press. 1950. Pp. xiv, 357. $5.00.)

Mr. Wallich's study of the Cuban economy is divided into two major sections: the first section is a review of Cuban monetary history and policies from 1914 to 1947. The second section is largely analytical, with particular emphasis on the processes of cyclical expansion and contraction, the mechanism of balance-of-payments adjustments, and the potential effects of exchange rate variation and exchange control. The last chapter, which deals specifically with central banking policy, is particularly interesting in view of the recent establishment in Cuba of a central bank.

This book is a welcome though delayed addition to the growing literature applying modern tools of economic analysis to the problems of under-

developed economies. Particularly noteworthy are the analyses of the expansion and contraction processes in an export economy and the problems to which they give rise, and the discussion of the potential effects of exchange rate variation in such an economy. The analytical achievement is even the more remarkable since the bulk of the book was written several years ago. Most of the propositions advanced by Mr. Wallich have in the meantime gained wide acceptance, partly as the result of the prior publication of several chapters in the book. Therefore, little purpose would be served by a summary of these analytic propositions.

The time span involved in the preparation of the study accounts in part for its major deficiencies, which take the form of internal inconsistencies and an undue emphasis, particularly in the historical chapters, on the cyclical aspects of Cuba's monetary experience.

The internal inconsistencies in the book are in part apparent and in part real. In the historical chapters, which make up the bulk of the study, the major purpose, according to the author, is to show the consequences of Cuba's lack of an independent monetary system, including a central bank, during the period 1914 to 1947. If these sections, particularly Chapters 3 through 11, are read as an independent study, the impression is gained that during the period from 1914 to 1947 the opportunities for compensatory action which were missed as a result of the absence of an independent monetary system were of relatively minor importance. In the analytical sections, which were written more recently, Mr. Wallich appears to hold greater hope for the potentialities of compensatory action under an independent monetary system, although even in the analytical sections the limitations on countercyclical policy are constantly stressed. This apparent inconsistency between the historical and analytical sections arises from a failure to specify in sufficient detail the factors which are to be taken as given in the treatment of each historical epoch. For example, in the discussion of the depression of the 'thirties (which began in Cuba somewhat earlier than in the United States) the implicit assumption was made that an independent monetary system in the preceding boom would not have resulted in Cuba having built up a sufficient level of foreign exchange reserves, behind which Cuba could have undertaken a more positive compensatory policy. Furthermore, Mr. Wallich reflects much greater confidence in the historical sections than in the analytical sections in the benefits actually derived from an unmanaged exchange rate and from the absence of exchange control. As a result, very severe limitations are placed in the historical review on compensatory policies.

Some real inconsistencies are evident within the historical chapters. In discussing the moratorium episode during the 'thirties, Mr. Wallich notes that monetary expansion or depreciation, or possibly both together, would have been economically desirable, since the laissez-faire policy followed by Cuba for the most part put the Cuban economy completely through the wringer. Yet, in his later discussion of the course of monetary events during

the 'thirties (p. 172) the conclusion is reached that there was really no significant shortage of money supply in Cuba during the great depression because the money supply moved in harmony with the value of exports.

The concentration of cyclical problems in the historical review and the failure to treat in the analytical sections in a more comprehensive fashion the relationships between Cuban monetary policies and long-term problems of economic development constitute more important weaknesses. They reflect something other than the fact, noted in the preface, that "Cuba's otherwise rich monetary experience includes no episode bearing on financial aspects of development programs." They indicate a disposition, shared by many of us in the late 'thirties and early 'forties, to abstract from the long-term development problem in treating cyclical aspects of monetary policies. Although in the first chapter and in the last chapter there are some brief discussions of the environment for economic development and of monetary policies related thereto, the analysis is not sufficiently developed and is not closely integrated with the rest of the study. To illustrate, one of the structural characteristics of the Cuban economy important both for the appraisal of past experience and as a guide for future monetary policy is the existence of unemployed resources. Mr. Wallich notes in the opening chapter the fact that there is both seasonal and structural unemployment in Cuba, but a judgment as to its scope is not made, and it is virtually ignored in the subsequent chapters. In the view of many trained observers such unemployment is pervasive in Cuba. It is cited as a reflection of the fact that no new dynamism has been substituted in the Cuban economy for the sugar development which dominated its earlier history. Although no one can claim that the existence of an independent monetary system or a change in monetary policy would alone supply a new dynamism in Cuba, an overriding fear of inflation or of exchange depreciation and exchange controls may constitute a real obstacle. Mr. Wallich is, of course, much too well balanced in his appraisal of the Cuban economy to yield wholly to such fears. Nevertheless, the emphasis in his discussion of the development problem in Cuba seems to be on the need for great caution. The principle is stated (p. 308) that development projects should be pushed during the depression and held back during the boom. Although Mr. Wallich concedes that the principle may have to give way to expediency, its applicability to Cuba is not questioned. The observation (p. 20) that during boom times "a large part of domestic savings cannot effectively be utilized for domestic investment because . . . the factors of production are already fully employed" is questionable if it is intended as a statement of fact rather then a definition of "boom times."

The structural deficiency in Cuba of the level of effective demand, particularly investment demand, reflected in the recent postwar period in a continued rise in foreign exchange reserves, is a basic factor not adequately appreciated in the appraisal of Cuban monetary history or in the application of central banking principles to Cuba's current problems.

GERALD ALTER

Washington, D.C.

Statistics and Econometrics

On the Accuracy of Economic Observations. By OSKAR MORGENSTERN. (Princeton: Princeton University Press. 1950. Pp. ix, 101. $2.00.)

Economic data contain various kinds of errors. Definitions are vague, classifications are rough, and surveys and censuses are incomplete. Professor Morgenstern describes these and other errors, warns us of the dangers of neglecting them, and calls for a broad new policy to correct the situation.

To illustrate his points, the author is able to quote existing statistics where independent estimates of similar things exist. Thus foreign trade data as reported by different countries sometimes differ by more than the smaller figures, indicating errors of over 100 per cent. The Kuznets' estimate that errors of 10 per cent are not unlikely in national product totals is quoted, and other important differences in price and production statistics are observed. These illustrations serve the author's purpose of emphasizing the importance of the problem, but they are not so successful in explaining the complexities of the problem. Indeed, the error estimates are as liable to misinterpretation as the original data. For example, errors in year-to-year relative changes in national income are a different thing from the absolute error in a given year, and the two should not be confused. Morgenstern does not have the information to estimate the different types of errors, and this lack of data is the point which he makes.

We are warned that the importance of the defects in the data is increasing rapidly because the data are being asked to bear an ever-growing weight of evidence. Governmental, industrial, and labor decisions are based upon them. Economic studies of many kinds, some highly intricate, utilize them. Professor Morgenstern's immediate concern is the rôle of economic data in input-output studies, where estimates of errors in the theory itself magnify the importance of errors in the source data. It has turned out that the growth in the quantity of economic information has increased the use of data to the point that better understood data are necessary.

The author does not suggest any ready solution to the problem, since its complexities are many, and since the cooperative endeavors of many persons and institutions are necessary for solutions. The author is content to call attention to the problem, and to appeal for a fundamental change in the attitude of those concerned with economic data. This involves "bringing out in the open the nature of the underlying errors, the various types of bias involved, the differences and uncertainties of classification, etc., instead of relegating the information to the background of footnotes or not dealing with it at all" (p. 44). Especially should estimates of error be required of the agencies gathering data, for without this foundation, agencies utilizing the data are helpless. The author has a good deal to say about the meaninglessness of excess digits and decimals, so much so, that one fears that the practical result of the study may be to persuade administrators to lop some figures, with very little foundation of analysis. It is hard to believe that this curtailment would save as much expense as the author envisages. We may

well agree with Professor Morgenstern, however, that the hall-mark of good data should not be a demonstration that estimates are the best possible under given circumstances, but a complete and precise statement of the meaning and accuracy of the estimates.

PAUL SIMPSON

University of Oregon

Economic Systems; Planning and Reform; Cooperation

Private Enterprise and Governmental Planning—an Integration. By THEO SURÁNYI-UNGER. (New York: McGraw-Hill. 1950. Pp. xii, 389. $4.50.)

The author starts from some assumptions with which most social scientists will heartily agree: that all national economies, including that of the USSR, are composites of collectivistic and individualistic elements; that in increasing the amount of collectivism beyond some point a growing resistance is encountered and further steps are bound to become less beneficial or more detrimental; and that the same rule applies to the movement from collectivism toward individualism. From these assumptions Dr. Surányi-Unger develops an idea which may prove to be a gold mine. He tries to apply the apparatus of indifference curves to the problem of how much collectivism and how much "private enterprise" can or should exist in any given economy.

In order to explore the potentialities of this idea, however, a good deal more testing and probing will have to be done, and some of the tools will have to be forged with greater care than Dr. Surányi-Unger has used. To recognize the basic difficulty, we have to go back to the elementary concept of indifference curves. We may use Benham's example of the soldiers who receive each a ration of rum and a ration of cigarettes and who barter rum for cigarettes or vice versa to satisfy their individual preferences as completely as possible.[1] In preparing for barter, each soldier finds that various combinations of the two commodities would be equally satisfactory to him; if each of these combinations is represented by a point between an "all cigarettes" and an "all rum" ordinate, the connections between these points of equivalence will form negatively sloped indifference curves.

Obviously, in this construction it is essential that the sacrifice of a quantity of one good is the condition for obtaining more of the other. Is it equally necessary, in any given society, to renounce the advantages of additional collectivistic measures to secure the advantages of additional individualistic measures? Do we not rather, as a rule, find it possible to introduce more collectivism in a field in which this seems to be useful and at the same time to expand individualism in another field where we can do so with advantage? If we consider the conditions under which the beneficial and the detrimental effects of partial changes in the structure of the system can be separated from one another, we are in a sea of problems of which Dr. Surányi-Unger has only touched the surface.

[1] See Frederic Benham, *Economics. A General Textbook for Students* (London, Pitman [first ed. reprinted], 1939), p. 89 *et seq.*

He could avoid delving into that sea because he has approached the problem on a path which almost entirely avoids the crucial difficulty but, unfortunately, does not lead into the core of the matter. Dr. Surányi-Unger identifies the choice between economic collectivism and economic individualism with the choice between the satisfaction of collective and of individual wants. Surely, we can draw indifference courses, for instance, between the individual want for food and the collective want for national defense. Here the renunciation of an additional satisfaction of one want is truly the price we have to pay for an additional satisfaction of the other, since the decision concerns the use of resources and the same resources cannot be used up for two different purposes. But such "cannon-butter" indifference curves do not tell us how much free initiative and how much collective enterprise we should have or can have or shall have in the production of either cannon or butter. It cannot be seriously maintained that the latter question is not relevant to the problem of collectivism versus individualism, or that a society which gives more weight to the "cannon" side will always have more collectivization of the instruments of production than a society which emphasizes the "butter" side. In other words, the collectivistic or individualistic character of an economy is not determined merely by the distribution of resources among different kinds of want but also by the methods employed in the satisfaction of any wants, and the emphasis on certain wants, in preference to others, is no reliable indicator for (still less a measure of) a preference for certain types of method. Therefore Dr. Surányi-Unger raises an unsubstantiated claim when he speaks as if his indifference curves represented choices between a *generally* more collectivistic or a *generally* more individualistic character of society. The numerous passages in which he seems vaguely aware of the limitations of his argument do not remedy the basic fault.

But perhaps the attempt undertaken by Dr. Surányi-Unger may still be led to completion. The interrelationship between the beneficial and the detrimental effects of individual steps in collectivization and de-collectivization can certainly be more systematically investigated than they have been so far, and it may become possible to fit these effects into a scheme that would permit the application of the apparatus of indifference curves. If this road can be opened, it will be only fair to remember that Dr. Surányi-Unger was the pioneer who explored the first stretch.

The jacket describes the book as a "text" for "advanced courses in economic theory." Although I would certainly not call a highly experimental book like this a text, it may well be used in graduate courses as a basis for discussion. But for this purpose it would have been better if the author had shown a little more leniency toward the reader whose mathematical equipment is not equal to his own. With a little more explanation and with the use of simpler methods of mathematical presentation, even the despised tribe of non-mathematicians (among whom this reviewer belongs) can be led to a substantial degree of understanding of such matters as Dr. Surányi-Unger discusses. Aside from the inconvenience for a number of his readers, the kind of mathematical treatment chosen by the author is dangerous

because it produces a semblance of exactness while by no means are all the problems and their underlying concepts clearly defined: it is somewhat exasperating, for instance, to see Dr. Surányi-Unger use highly refined mathematical apparatus to measure the amount of collective economic planning without having worked out an even formally adequate definition of this highly controversial term.

CARL LANDAUER

University of California, Berkeley

Economic Systems: A Comparative Analysis. By GEORGE N. HALM. (New York: Rinehart. 1951. Pp. x, 438. $4.50.)

Until recently most texts on comparative economic systems tended to contrast a highly imperfect and problem-ridden capitalism with a serene socialist state in which all problems might (by implication) be solved by "planning." In ninety-nine per cent of the literature *expanding* capitalism is compared with what will, on analysis, turn out to be *stationary* socialism. The notion that there are economic problems, especially regarding investment continuity, transcending the "planning" versus "non-planning" debate has had a hard time establishing itself.

On all these points Dr. Halm's treatment is in many respects a considerable advance over previous texts. The practical problems of socialism, as well as of capitalism, receive careful analysis, and the last half of the book is a review of intensely interesting specific historical material on Russian, German, and English experience. While Halm has not yet entirely emancipated himself from the limiting effects of stationary equilibrium analysis, and seems to me a bit to overstate its scientific universality (pp. 7-9), he nevertheless has achieved a much more dynamic formulation than has hitherto been customary. And it is refreshing to find it recognized that socialism—too—can be guilty of "over"-investment (pp. 116, 305).

Despite these many merits and and a frequent inpressive advance in realism, for example, regarding worker morale under nationalization (p. 382), Dr. Halm's book has a good many vulnerable points, some of which may be mentioned. The chapters on capitalism appeared to this reviewer particularly weak. They are written from the standpoint of an emotional "liberalism" which is sometimes almost rabidly equalitarian. Halm accepts the common idea (pp. 67, 68) that such attitudes are not value judgments but matters of "scientific" proof and gives his students no authority to the contrary. Bigness (in absolute size) has somehow gotten confused with "monopoly"; and "size" with cut-throat competition (p. 95). "Competitive" capitalism is praised for steering a "middle course" in language clearly involving deviations from pure and perfect competition (p. 87). Yet where to draw the line at "monopoly," or what monopoly is, is never stated (Chap. 8). And while "big" business is criticized for many pages, union restrictivism gets exactly one paragraph (p. 100).

On the matter of profits and dividends, Halm seems especially evasive. He inserts quotations (pp. 51, 52) to show that the profits of "big" business

should go to the managers rather than the stockholders and may be unnecessary as incentive, while his discussion of Marx is on a very superficial exchange-relation basis (Chap. 12). In the treatment of "surplus value" the moral justification of profit as a possible supply price is entirely dodged. The problem is omitted also in Chapter 16 where for a long time the impression is given that only depreciation and interest are important. Also even regarding profit as an indicator, it does not appear until Chapter 17, page 228, that in a socialist state profits are "the necessary gauges in steering the allocation of resources."

Perhaps the weakest point to this reviewer was the treatment of socialist over-investment. It does not seem entirely in line with Professor Halm's stated objectivity to have omitted (Chap. 9) all reference to the fact that according to many writers such "over" investments need not always be the result either of "mistakes" or lack of planning. He did not of course have to agree with the idea, but should not a scholarly and balanced work have mentioned its existence? Furthermore, the same conclusion is clearly implicit in Halm's own analysis.

Halm's comparison, in this regard, of socialism and capitalism is scarcely fair. Like the writer's *Economics of Disturbance,* his book points out that socialism can avoid deflation (p. 116) after what Halm calls a "mistaken" over-expansion. But, of course, no "mistake" is necessarily involved, and the impression given is that in avoiding unemployment we avoid all evil. That socialist "over" investment can lead, instead, to starvation, inflation, and death for millions is not stated, and only emerges by inference much later in the book, in the discussion of Soviet economics.

One final point may be mentioned. I find the cumulative effect of some of Halm's remarks rather disturbing. First of all, we *must* have more equality (pp. 67, 68). Next "in the preceding chapter we *had* (italics added) to arrive at the conclusion that the distribution of the national income cannot be significantly changed, if we want to maintain our private enterprise system" (p. 77). (Incidentally the text referred to seems rather to the contrary—p. 63.) And finally, on page 75, and again in discussing English socialism (p. 381), it is suggested that Lange is right in saying that one cannot socialize piecemeal. Do not these statements tend uncomfortably in the direction of a theory of inevitable revolution? I should like to close, however, by stressing once more that this is a thoughtful and stimulating book.

DAVID MCCORD WRIGHT

University of Virginia

Social Economy and the Price System—An Essay in Welfare Economics. By RAYMOND T. BYE. (New York: Macmillan. 1950. Pp. viii, 356. $3.50.)

Professor Bye's *Social Economy and the Price System* is a provoking book. The underlying theme is welfare economics in the Pigovian tradition; but often this is intermingled with moral criticisms of the American economy that are reminiscent of Veblen or with Utopian dreams of a collectivist United States worthy of Edward Bellamy. As a human being, one can agree or disa-

gree with each of Professor Bye's numerous social, political, and economic *dicta*;[1] but as an economist, one finds little to analyze. Here, within three hundred odd pages, is set forth much of the best and the worst that economists have contributed to the ideas of reformers.

The work can hardly be intended for professional economists, for it does not contribute to value theory, income theory, or distribution theory. It would make an excellent text for undergraduates in the social sciences if read in conjunction with some book that would offset Professor Bye's political naiveté. I would especially recommend *Social Economy and the Price System*, even at the risk of apoplexy, to all successful persons over fifty years of age who believe that our economy cannot be improved.

Professor Bye commences by stating eighteen principles, pertaining to the selection of wants, the division of income, the balancing of present and future needs, and the quantity and efficiency of production, that he believes a social economy should follow. For example, the principle of optimum output is that each plant should be kept at the point of lowest average cost, except during short periods of abnormal demand (p. 238):[1] he suggests that, except where there are monopoly elements, a price system will tend to satisfy this requirement under certain conditions. Professor Bye also distinguishes three normative price systems. (1) A "natural" (or free) price system is one in which prices are allowed to find their own level in markets, substantially free from government interference, that reflect all the social factors that influence their supply and demand schedules. (2) A "protected" price system is one in which prices are uncontrolled "but consumers, investors, laborers, and enterprisers . . . must now conform to enlightened rules of fair dealing" (p. 40). Monopolies would either be suppressed or regulated, natural resources would no longer be exploited, and houses of ill fame would be prohibited. The government would regulate the economic environment surrounding markets rather than market prices themselves. (3) A "normalized" price system is defined as one in which prices are held close to their competitive norms by deliberate state control: such a price system can exist only in a centrally planned and directed economy. Today the United States economy includes all three kinds of price system. Although he does not say, one infers that Professor Bye inclines toward the authoritarian "normalized" price system rather than towards the truly liberal reforms of the "protected" price system.

Like anyone else, Professor Bye notes many of the imperfections of our economy. He decries its extreme income inequality, its misrepresentation of goods, its occasional monopolies of commodities and of labor, its fluctuating credit, its failure to make the most of human talent, and its predatory character. Here, too, is all the usual envy of the well-to-do.[2]

What is to be done? In suggesting reforms for the future, Professor Bye

[1] If Professor Bye had made his precept marginal costs equal to demand price, he would have had a valid principle for short- and long-run conditions under pure competition. This generalized rule of Hotelling is never mentioned. The special form of the rule, given by Bye, is comparatively clumsy; however, it does enable the author to avoid employing marginal concepts, as perhaps he wished.

[2] No one should have an income exceeding $25,000 a year.

is willing to substitute more tinted and blurred spectacles than those he reserves for glaring at the world as we know it. The fundamental remedy seems to be something called collectivism or general economic planning. Collectivism will do away with the wastes of competition, reduce cyclical unemployment to a very small minimum, improve the allocation of resources, eliminate the problem of monopoly, prevent inflations and deflations, and eliminate all income inequalities not needed as incentives. Apparently everything will be much simpler and better when the age-old problems of who is to do what and get what have been handed over to the rather ordinary people that comprise most government agencies.

The fundamental defect of *Social Economy and the Price System* is its lack of political "savvy." Three decades ago it was understandable that reformers might believe that collectivist governments would regulate in the general interest and be a distillation of all that is honest, wise, and good in mankind. Today, with the experiences of the United States, the United Kingdom and Soviet Russia before us, we should know better. As for the United States, it is now clear that its government tends to be forced into contradictory policies on behalf of conflicting special interest groups. As regards rents, the federal government regulates for the tenants. As regards farm prices, the government regulates for the farmers. As regards consumer prices other than food prices, the government regulates for the housewife. As regards fiscal policy, the government fears the taxpayer and inflates the economy with bank credit. Special interests are served, and the general interest goes by default, when a democratically elected government regulates the economic affairs of voters. On the other hand, voters being what they are, how can the government place the general interest above special interests unless it dispenses with elections and depends not upon voters but upon the police? It is useless, if not dangerous, to advocate economic reforms without giving equal thought to the bureaucracy capable of implementing them.

One cannot conclude Professor Bye's book without admiring and respecting its author. He is so patently a serious, sincere, and unselfish reformer. He is honest with his readers and mentions points that gainsay his thesis when they occur to him. He is not for or against workers, farmers, businessmen, blocs, or parties. He *is* opposed to poverty, special privilege, and greed. And he is very much in favor of Utopia.

STEPHEN ENKE

Pacific Palisades, California

Intellectual Capitalism: A Study of Changing Ownership and Control in Modern Industrial Society. By JOHANNES ALASCO. With a preface by Raymond Holden. (New York, Montreal, London: World University Press. 1950. Pp. xviii, 140. $3.00.)

The woods are full of books on how best to save capitalism. Is this a signal of distress? The debate shows widespread lack of agreement on the exact characteristics of capitalism as such, on the kind of distress it is in (if any), on its causes, and, of course, on the possible remedies. Some of the would-be

savers of capitalism are considered socialists by their fellow-savers.

A host of recent books has discussed the question of monetary or social correctives that might help capitalism survive. But what exactly do we choose to call capitalism? Is free enterprise in a strict sense, a workable competition, or simply private enterprise its decisive trait? At what point does public intervention turn into collectivism? Are authors today caught in semantics to the degree of having to present needed economic reforms as a campaign to save capitalism?

Johannes Alasco (which is the pseudonym of a Polish-born writer) puts the main emphasis on the structural changes in ownership and control that have occurred in America during recent decades. To this extent his approach contains some elements of Marx, Veblen, Berle and Means, Knauth, Burnham, and the Technocrats, but each of these elements enters the argument in a restated, diluted, or critical form. The main thesis is this: "The revolution of our time, brought about by the upsurge of applied science, is not one against, but within, capitalism. A new ruling class—that of industrial executives with a scientific outlook—is going to take over the economic power of industry from the present ruling class, composed of large stockholders and financiers. The term intellectual capitalism suggests this revolution very clearly" (p. xviii).

To prove this thesis, the author starts out from the assumption that man is essentially individualistic and egotistic, and that capitalism mirrors this basic fact. He defines capitalism as the ownership by private individuals of the controlling assets of productive enterprises, combined with social and political leadership based on such ownership. "Capitalism cannot subsist if the legislator does not follow the 'party line' of business" (p. 9). Mr. Alasco appears to advocate here a totalitarian capitalism based on voluntary acceptance by the people; the Marxists overlooked that "in a society with a balanced social structure everybody has his stake in the aims of the ruling class" (p. 11).

The concept of capital itself has, however, undergone a metamorphosis due to modern corporate organization. The immaterial, intellectual capital is now the source of the productive power and earning capacity of corporations. The real economic conflict today is that of jobholders versus stockholders. "Property has come to mean ownership of the income derived from the use of capital" (p. 20). "We are no longer a generation of savers and builders. *We are income consumers*" (p. 25).

In addition, there is an increasing rift among the executive jobholders themselves: the spirit of workmanship, represented by the production man (P-man), is pitted against the spirit of salesmanship, represented by the finance man (F-man); a distinction which appears especially sharp at the lower and upper ends of the corporate hierarchy. The F-man's income originates definitely in business profits; the P-man, however, can prosper under either capitalism or collectivism. However, since human beings are selfish by nature, collectivism, too, is bound to be a business enterprise. Marxist socialism has been creeping into the social organisms of the Western

world by an infinite variety of means; often has it been carried forward by misguided P-men in search of a "planning for abundance."

The essential thing, however, is the shift in importance from material to intellectual capital. Private property is being redistributed in line with this shift as it has been repeatedly in the historical development. The P-man, who actually comes to control enterprise (whether it is privately or publicly owned at first makes little difference) will eventually consolidate his control by acquiring formal property rights. "The capitalist of our day is a person who owns a portion of the intellectual assets under the form of a number of common shares. These represent capitalized intellectual power" (p. 84).

The controlling asset—which was land under feudal capitalism, raw materials under commercial capitalism, machinery under industrial capitalism, money investment under finance capitalism—is now of an immaterial, intellectual nature. "The expropriation of the stockholders by the technical intelligentsia is around the corner" (p. 91). Initial nationalization would make little difference in the long run, for private ownership will reappear in one form or another. Knowledge has become the real source of wealth. The new Captain of Science will eventually be both an owner and a manager of capital; he will be a production man with scientific intellectual training, and his economic system will rest on a nationally planned economy. It is essential, Mr. Alasco concludes, that the prevailing capitalist ideology in the United States recognize these changes; free enterprise in the old sense is passing, but capitalism is just assuming a new form. "Socialism and managerial enterprise are two episodes in this early stage of evolution of the new private enterprise" (p. 118). Unless American capitalism sees the signs of the times, the new professional intelligentsia will be attracted to collectivist systems which offer to it some very tempting opportunities.

To this reviewer's mind, this book is a most peculiar mixture of keen observations on corporate enterprise and highly dubious generalizations on human nature. It is far less foolproof in its forecasts than in its analysis of past developments; in neither case does it attempt any documentation worth mentioning. In subscribing to the statement of a widely read weekly that Mr. Truman's scheme of things "adds up to socialism" (p. 51), and on various other occasions, the author shows a semantic confusion which makes it unlikely that his argument will be taken as seriously as it might otherwise. It is too bad that his many interesting observations and provocative suggestions are blurred by loose terminology and thinking, unhistorical generalizations, and psychological oversimplifications.

ALBERT LAUTERBACH

Sarah Lawrence College

Cooperative Peace. By JAMES PETER WARBASSE. (Superior, Wisconsin: Cooperative Publishing Association. 1950. Pp. xiv, 273. $3.00.)

In this book a pioneer of the cooperative movement examines the causes of war and possibilities for peace offered when society is organized on the cooperative principle through local associations, regional and national federa-

tions, and world federation. The author states (Preface, p. vii) that the book is made necessary by the change now going on from profit capitalism to some other system. A struggle exists between two ideologies—free enterprise and centralized governmental control. Cooperation exemplifies free enterprise and private property. However, it differs from profit capitalism in that it substitutes the service motive for the profit motive; democracy for autocratic control by owners and officials; absence of debt for the piling up of debt; unlimited membership and abundance for exclusion and artificial scarcity; and ethical and peaceful practices of mutual and personal benefit for the competitive, warful, and destructive practices of business for personal gain.

Mr. Warbasse believes that economically the cooperative method of business can compete successfully with either profit capitalism or socialism. Presumably he would offer as proof the continued and rapid growth of cooperation in membership, societies, capital, business volume, and fields of service since the Society of Equitable Pioneers was founded in 1844. Total membership in cooperative societies of all kinds in 43 countries amounted by 1946 to 143,000,000 persons (p. 7). Monopolies try to hamper and destroy cooperative business. Thus the oil companies are trying to shut out organized consumers from the production of petroleum products. Cooperation's greatest danger, however, lies in the advance of socialism, that form of statism which is supplanting profit enterprise. Socialism can use coercive methods to promote state ownership and to prevent competition of other systems. Thus the voluntary method of cooperation can only hope to win by proving its superiority and by winning popular support.

Mr. Warbasse is at his best in describing the cooperative way and cooperation in action. Ten chapters on these subjects contain a good statement of the cooperative philosophy and program. Failure to deal adequately with the question of how democratic and efficient cooperatives would be in manufacturing, transportation, and other industries where large-scale production and enterprise are essential was disappointing to the reviewer.

Discussion of war is confined mainly to its economic causes and consequences. The usual causes are cited. A chapter is devoted to "the constant war" (hostilities among individuals), called "war" when it extends across international borders. Conditions necessary for peace boil down largely to those which would obtain if cooperative society prevailed everywhere. Cooperation means democracy, which is essential to peace; opposes strong central governments, with their war-making powers of coercion, nationalistic propaganda, and armament building; avoids competition for domestic and export trade by the cooperative method; removes the potent profit motive for war; eliminates race hatred and racial barriers; and promotes international understanding. In short, the only way to peace is the cooperative way. Many will question this conclusion, and also acceptance (pp. 104-6, 133-34) of the Marxian theory of imperialism (capitalist nations keep wages down and prices up, so that workers as consumers cannot buy all they produce, necessitating export of the surplus). The analogy (pp. 81-84) between cells of the human body and individuals comprising society is not convincing, and the contention (Chap. XXXIII) that cooperation conforms to natural laws relies on a discarded and untenable doctrine.

The book is well organized and clearly written. It draws heavily from the author's previous books[1] with little use being made of recent literature on the economics of war. Since it is apparently intended for popular consumption, the general lack of supporting references and the extreme brevity of some chapters may be justified. Though offering little that is new to the specialist, *Cooperative Peace* should prove interesting, provocative, and timely to the general reader.

ROY C. CAVE

San Francisco State College

[1] *Cooperation a Way to Peace* (1939), *The Cooperative Way* (1946), and *Cooperative Democracy* (1947).

De Overheidsfinanciën in de Volkshuishouding. (Government Finance and the Economy) By D. B. J. SCHOUTEN (Leiden: H. E. Stenfert Kroese's Uitgeversmaatschappij N. V. 1950. Pp. xi, 158.)

Dr. Schouten believes that neither the completely free nor the closely controlled economy is desirable. Between these extremes lies the "directed" economy. Here the government seeks only to secure the appropriate general economic conditions and leaves the rest to the "free play of economic forces." Under this scheme, the government intervenes primarily, in a broad way, to help maintain a high level of income and employment. Schouten, therefore, examines the long-term influence of public finance upon the size, distribution and expenditure of the national income.

This macro-economic study evolves principally around three models: the classical, as defined by Schouten; the Keynesian; and the author's, a combination of the preceding two. The effects of governmental fiscal policy upon national income are shown by reference to these models. In two short appendixes, Schouten considers the relationship of government finance to the balance of payments and business fluctuations. In addition to these purely theoretical matters, there is an analysis of the changing rôle of the government in the national economy as illustrated by the experience of the Netherlands.

Professor Posthuma, the editor of the series including this volume, has neatly characterized the contribution made by this book. In the foreword he states that it contains a clear exposition of the classical and Keynesian approaches and provides the analytical techniques requisite to formulation of sound governmental economic policies.

WYTZE GORTER

University of California, Los Angeles

Business Fluctuations; Prices

Inventories and Business Cycles. By MOSES ABRAMOVITZ. (New York: National Bureau of Economic Research. 1950. Pp. xi, 632. $6.00.)

This is the most important empirical study of business cycles which has appeared since the publication in 1937 of Kuznets' *National Income and Capital Formation, 1919-1935.*

It is, however, more than a factual study. It interweaves statistical findings with theoretical analysis. Thus, both in terms of theory and statistics, it is a highly significant contribution to cycle literature.

The book is divided into three parts. Part I begins with a discussion of the rôle of inventories in business-cycle literature. Though far from being an exhaustive treatment, it does set forth some half-dozen theories relating to the rôle of inventories in the cyle. This is followed by the familiar standard description of the National Bureau measures of cyclical behavior.

Part II presents a picture of the cyclical behavior of inventory stocks. Attention is concentrated on (a) goods in process (often in the general cycle literature referred to as "working capital") (b) raw material stocks and (c) stocks of finished goods. The latter two might perhaps be set off apart as "inventories proper." Part III relates to the cyclical behavior of inventory *investment.* These parts contain a careful appraisal of deficiencies in the statistical data.

Part III necessarily goes back over much of the ground already covered in Part II, since inventory *investment* represents net additions made to stocks. It would seem to me that it might have been a better arrangement had the author treated "stocks" and "investment" concurrently throughout the book. The two things are inherently inter-related, and something would have been gained, it seems to me, if both aspects of the problem had been treated simultaneously. "Inventory *investment*" necessarily leads "inventory stocks" on the average by a quarter cycle.

Professor Abramovitz finds that manufacturers' inventory stocks as a whole lag behind the business cycle. The lag is from six to twelve months. If the cycle (as defined by the National Bureau) is typically around 40 to 48 months long, a lag of the magnitude indicated above suggests that inventory stocks as a whole lag somewhat less than a quarter-cycle behind the business cycle. This would indicate that inventory *investment* as a whole leads the business cycle by a small margin.

But it is perhaps not very useful to consider total stocks. The behavior is quite different with respect to different categories. "Goods in Process" are necessarily rather closely tied to output. This category comprises about 20 per cent of all manufacturers' inventory stocks. If "stocks" of goods in process coincided with the cycle, then inventory *investment* in goods in process must lead the business cycle by about one-quarter cycle.

Raw materials contribute about 40 per cent of manufacturing inventories. These stocks are composed partly of materials readily obtainable from American producers; in this case the lag of stocks behind the business cycle is short, perhaps two to three months. Another part of "raw material" stocks is imported. Such stocks are necessarily very slowly adjusted to cycle changes; indeed, the lag may well be a half cycle in length, thus producing an inverted movement of stocks in relation to the general business cycle. A third part of raw materials are of agricultural origin. The fluctuation in these stocks is influenced mainly by supply conditions, and only remotely by business-cycle conditions.

Taking an over-all view of all "raw materials," including all three categories listed above, it appears that *stocks* lag about three months (perhaps longer) behind the cycle. All in all, then, inventory *investment* in raw materials would precede the business cycle by a considerable margin. But there is high diversity in the movement of the different categories, ranging all the way from a considerable lead to even a lag of investment behind the general business cycle.

Finally there is the category of finished goods. These constitute about 40 per cent of total manufacturers' inventories. One group—goods made to *order*—are fairly closely tied to manufacturing activity. With respect to another group, namely, goods made to stock, the tendency is to lag a half cycle (*i.e.*, inversely to the business cycle) if the particular business cycle in question is fairly short. If the cycle is prolonged, however, the lag is considerably less than a half cycle (*i.e.*, the correlation is positive with a very long lag).

The over-all lag of *aggregate* stocks (goods in process, raw materials, finished goods) appears to be about six to twelve months, perhaps around eight months. Stocks of "goods-in-process" and "finished goods made to order" are synchronous with the cycle; total "raw material" stocks follow the cycle with a short lag; while "imported raw materials" and "finished staples made for the market" follow the cycle with a long lag. These conclusions are, however, all very tentative.

To sum up, since inventory *stocks* follow the business cycle by slightly less than a quarter-cycle lag, inventory *investment* must necessarily precede the cycle by a short lead. A "short lead seems more likely than a short lag, but we cannot be sure" (p. 460). Total manufacturers' inventory *investment* was found to reach its peaks and troughs in the same year as general business seven out of ten times between the two wars; retailers' and wholesalers' inventory investment, in eight out of ten times.

Inventory investment thus tends to lag about a quarter cycle behind the *rates of change in output*. If the acceleration principle operated instantaneously without lag, one would expect inventory investment to correlate with rates of change in output. But for this, as is well known, Professor Lloyd Metzler has a theoretical answer.

The empirical findings (p. 496) show conclusively that inventory *investment* played a much smaller rôle "in the major upswing 1921-29 than in the minor fluctuations in that period" (p. 495). Moreover, the data support the thesis that inventory investment plays an important rôle in the short or minor cycle. The evidence, however, is not adequate to give a conclusive answer to the question whether "the shorter declines of business are initiated by the appearance of saturation in the demand for additional inventories or by a failure of demand for other kinds of goods" (p. 497).

The lag of stocks behind the business cycle revealed in the data fit quite well, as indicated above, with Metzler's analysis of the lagged adjustment by businessmen in their effort to bring inventories into line with changes in sales. The conclusion reached by Abramovitz is that the Metzler adjust-

ment process appears to be plausible (p. 498), but longer series of inventory data than are now available are needed to prove it.[1]

Cycle literature is full of shrewd guesses about inventory stocks and inventory investment, and often one finds apparently quite contradictory views expressed. We can now see from Abramovitz's study that it often turns out that all *could* be right, depending upon which particular category of inventories was under consideration by the author in question. With respect to the *over-all* picture, it is interesting to see how nearly Wicksell had it right in his *Lectures* (Volume II on *Money*, pp. 213-14) first published in 1906. His intuition was right, but he had very little empirical evidence. Many a dark corner in business cycle literature would have been illuminated had Abramovitz's volume been available to the early pioneers of modern business-cycle theory. Abramovitz's work will for a long time to come occupy a place in the first rank of business-cycle studies.

ALVIN H. HANSEN

Harvard University

[1] In this connection see my discussion in *Business Cycles and National Income* (New York, 1951), pp. 471-76, based on Metzler's analysis, and the supporting empirical data drawn from Abramovitz's *Occasional Paper*, No. 26 (New York, Nat. Bur. of Econ. Research, 1948).

Inflation in the United States 1940-1948. By LESTER V. CHANDLER. (New York: Harper & Brothers. 1951. Pp. xi, 402. $6.00; text ed., $4.50.)

With the clarity which we have come to associate with his pen, Professor Chandler has written an admirable account of the monetary and financial developments of the war and postwar periods. In summary, his book is a quite thorough statement of what happened to prices, money, saving, credit, taxes, and to output and its components in the period under examination. To a somewhat lesser extent he addresses himself to the question of "why?" The period is, of course, a fascinating one, so that his story has interest, as well as pertinence to present policy problems. The text has 109 tables and 14 charts, almost all of them based on data with which we are familiar, but quite frequently presented in very useful and novel form. The tables alone make the book invaluable either as a reference for those working in the field, or as a convenient summary for those whose major interests lie elsewhere.

The author states in his preface that the book "is written in such a way as to be understandable by anyone with a general knowledge of economic processes." This is literally true. The economist who knows the period at all will find no new analysis and few new facts. As a matter of fact, the process of writing down sometimes means that the analysis stops just where the problems become really interesting. For example, the sections on incentives, beginning on page 119 and again on page 390, merely summarize the customary position that taxes should not be so high as to penalize incentive, but probably could have been higher without doing so. There is no discussion of the distinction between, or the relative importance of, the price and income effects of taxes on incentives.

Again, the discussion of the effects of wage increases on inflation in the postwar period (in Chapter 16) in effect simply says that wages both pushed

costs up and got pulled up by rising incomes and that it is difficult to tell which is more important. This is, of course, unassailable, but one misses the satisfying sort of careful analysis of this problem perhaps best typified by W. A. Morton's article in this *Review* (March, 1950, pp. 13-39).

The foregoing are noted not as criticisms but as indications of the level at which the book is written. I suppose it is true that incursion into a more sophisticated type of analysis would have a high cost in lost readers. And the virtue of this book is that it can be read and understood by Congressmen and administrators. It is quite obvious that many of these remain unaware of the terrible dangers of going through even a partial mobilization with a control system which has as an important by-product the addition of more and more assets, most of them liquid, to the portfolios of our citizens and institutions.

It is a reviewer's privilege to cavil, and I want to indulge twice. On page 50 and again on page 222, the consumers price index is used to obtain "real" gross national product over time. The procedure is properly qualified in the text so my point is truly captious. But I can't help myself: this just shouldn't be done. My second indulgence concerns Table 7 (page 38) which shows annual increases in personal disposable income, in personal consumption, and the ratio of the second to the first. A footnote identifies the ratio as the marginal propensity to consume. It turns out to be 3.5 in 1946, and well above one in 1945 and 1947 also. But this is surely not marginal propensity to consume in any usual sense. Consumption increased in the immediate postwar period because goods became available; almost certainly it would have increased even without an increase in income. It is, therefore, misleading to view it as a function of the increase in income, which is the concept expressed by marginal propensity to consume.

A final point may be made. On page 71 and on page 130 there is a clear inference that if the budget during the war could have been balanced, the inflationary pressures would have disappeared. The fact, of course, is that when government expenditures are rising from a full-employment situation it is not enough to balance the budget; a surplus is necessary if inflationary pressures are to be eliminated through fiscal policy (assuming the community's marginal propensity to consume to be less than one). This point is not at all crucial in Professor Chandler's argument, but it seems generally not appreciated in the profession and it is a shame to miss an opportunity to emphasize it.

But none of these points is serious, especially in view of the limitations the author has consciously and properly established for himself. He set out to prepare a clear and readable review of the monetary and financial aspects of the war and postwar period. He has succeeded admirably in producing a book which deserves to be read widely. It should prove most useful in helping us as a society to arrive at better decisions on how to combat the current inflationary threat.

JOSEPH A. KERSHAW

The RAND Corporation
Santa Monica, California

The Nineteen Fifties Come First. By Edwin G. Nourse. (New York: Henry Holt. 1951. Pp. iii, 184.)

In this little book of 184 pages, the former chairman of the Council of Economic Advisers presents what to many readers will seem an oft-told tale, and to others a provocative discussion of our basic socio-economic problem. Yet others, when they have finished the book, will feel that the tale is still untold.

Mr. Nourse sketches the development of farm, labor, and business pressure groups. In their quest for high income and the demand of each that the economic system shall give it security, they ask more than the economic system can give. The three groups between them bring inflationary pressures which, abetted by a national state of mind, by politicians who see federal deficits and inflation as a way of life, and by a military program which many are unwilling to tailor to economic reality, threaten to explode the economy, or to bring statism which may end our way of life. The abundant life may come in the year 2000, but the problem of the 1950's is group pressures and inflation. "Was 1950 our lost week end?", Mr. Nourse asks in the concluding chapter.

Mr. Nourse's remedy is simple to state, if not to achieve. We must all be mature. He accepts the pressure groups, but exhorts them to use their power for the proper protection of their members, not for greedy ends.

I suppose it is inevitable that in endeavoring to present this message in a very small and popular book, the author falls into superficialities and economic half-truths. Thus, unless I misunderstand what seem clear statements, Mr. Nourse states that advisory guidance alone, leading to efficient farming practices, "lays the solid foundation for economic stabilization of the agricultural segment of our economy." Full employment requires proper cost-price relationships, and, implicitly, if these were achieved, Say's law of markets would operate and all would be well (pp. 105-106). If we prevent inflationary booms, we will have prevented depressions (p. 114). And, most amazing of all, in a primitive economy capital had to be accumulated before productivity could be increased by the introduction of better equipment, but in a credit economy, "new ventures need not be limited by the amount of capital goods already produced and saved" (pp. 110-11).

But these statements must not distract attention from the philosophy which is presented. How can the economy operate effectively? By self-denial. "To be master of what we build, the individual must control himself as member of an interest group and as citizen. It requires a willingness to practice self-discipline within our organized economic groups and various levels of government which is not present today" (p. 25). "To subordinate one's own demands and forego the use of power to enforce them is not a harder lesson than has been mastered in many areas as the arts of civilized life have been developed" (p. 107).

It is not entirely certain that the situation which Mr. Nourse fears actually exists, though I suppose most economists believe that it does. The presence of inflation does not prove the existence of intolerable group pressures. It may merely prove that the public does not understand that tough fiscal and

monetary policies would be in its own interest. It is possible that existing group pressures are not so great as to break down price stability during high employment. The period 1948-1950 offers some hope that advancing technology furnishes enough cushion to satisfy all three groups without inflation. To this basic question of fact, Mr. Nourse *assumes* an answer. He does not examine the data.

Yet it would be folly to deny that the *danger* exists. But even it we accept Mr Nourse's assumption, his exhortation provides no rule by which to guide action. For what is at stake is the division of a pie. Self-restraint by one group means acquiescence in a lesser degree of self-restraint than otherwise, or in other words in a greater degree of aggression, by another group. Self-restraint in the public interest may have an appeal; but concretely, if the problem is as Mr. Nourse pictures it, self-restraint means acceptance of reduced income by one group in order that a rival group may have increased income.

Clearly, no group need accept responsibility for inflation, or for resort by society to statism to suppress inflation, if its demands have been right and just, and the inflationary pressure has arisen from the unjust demands or reactions of other groups. In this context, can anyone doubt that moral exhortation to be meaningful must be accompanied by a rationale for determining the appropriate degree of self-restraint by each group? The problem in asking self-restraint is to develop a yardstick by which the three groups can be brought to agreement concerning the proper division between them of the social product—or, at least, a yardstick which will imbue in each group enough uncertainty concerning the virtue of its position so that it is willing to assent to a stabilization compromise.

But in the absence of an atomistic society, there is no economic yardstick by which the division which in some sense is "proper" can be determined. Even if the division which would obtain under conditions of atomism is accepted as a yardstick, it cannot be calculated if atomism does not exist. If there is a philosophic or moral yardstick, related in some way to egalitarianism, by which the product of a given period "should" be divided, it has not been stated unambiguously. And when stated it will probably conflict with economic considerations of incentive relating to maximization over time of social product and the material level of life. Some of the conflicting considerations may be incommensurable.

If they are not—if a yardstick is conceptually possible—then a tremendous contribution to our society remains to be made, in the hard task of stating the yardstick. But to this hard task—and to any consideration of alternative solutions—Mr. Nourse has made no contribution. He has simply said, "We must all be self-restrained." This is why to at least some readers, at the end of Mr. Nourse's book the tale will seem still untold. However, his exposition of a danger and his exhortation may in themselves be useful.

His account of the development of the three pressure groups is unemotional in tone—though he seems to this reviewer to regard labor and business as sinners, but farm groups as virtuous until put upon by politicians. Some emo-

tion appears when he refers to government policy. It would seem that he doubts the sincerity of some of the officials who disagreed with him during his government career. When he refers to these conflicts, there is understratum of bitterness, and a questioning of motives, which is absent elsewhere.

He writes well, urbanely and smoothly. He is something of a phrasemaker; on almost every page he turns a phrase or coins a term, which even if a little forced, livens the narrative and carries the reader along.

EVERETT E. HAGEN

University of Illinois

Money and Banking; Short-Term Credit; Consumer Finance

The Management of Bank Funds. By ROLAND I. ROBINSON. (New York: McGraw-Hill. 1951. Pp. vi, 425. $5.50.)

A long time ago it was a trite saying that there are three classes of banks, those the banker runs, those borrowers run, and those the banking department takes over. It was also then commonly observed that the second class of banks soon becomes the third class, just as slow and doubtful loans tend finally to emerge in the charge-off classification. All this was just a way of saying that not enough bankers have thought out their problems systematically and each in its proper perspective to others. For such bankers this scholarly work by a distinguished student of finance should be helpful in reducing the area of blind guessing. This comment stands despite the fact that the author himself would be the first to admit that bank administration is perhaps more of an art than a science because "science has not yet furnished inviolable rules."

The author begins with an analysis of the problem of "protective liquidity." Herein is introduced most of the material usually comprehended under the distinction between primary, secondary, and perhaps tertiary, reserves. Next, attention is given to loan policy with adequate emphasis upon modern developments in this field. Investment problems thence engage the author's interest, while the concluding section is devoted to the "Sources and Uses of Bank Profits."

The unfolding of the argument is done so skillfully that the reviewer can do little except praise. The author's grasp of economic problems is so firm that involved language is avoided, so much so that the reader may easily be tempted to disparage the depth of the analysis. To those of this mind it may be well to recall that there are two kinds of clarity, that of the superficial and that of understanding, and that this book reveals the latter type of clarity. The author is not the kind of economist who would darken counsel "till the student is lost in a bewildering maze of useless metaphysical abstractions."[1]

What attention should economists, as distinguished from bank administrators, give to a work of this type? To this, the author can only reply that what-

[1] Compare Thomas Wilson's references to Durbin, *Fluctuations in Income and Employment*, 3rd ed. (New York, 1948), p. 76.

ever degree of attention they give will probably not be enough. As the reviewer has written elsewhere:[2]

> Economists have been engrossed in the broader issues of banking, in problems of the banking system as a whole and . . . they have been trained to employ in their analyses over-all statistics, such as total loans and investments, aggregate deposits, index numbers of prices and of physical trade, and deposit velocities. Relatively few of them have had opportunity to engage in detailed analysis of the special problems of bank management. They have tended, moreover, to regard such work as falling in the narrow field of business administration. In the inner circles of economists little kudos is to be gained from expert understanding of the principles of successful management of the individual bank.

It would seem, therefore, that the best service the reviewer can render is to argue the importance to the economist of an understanding of the principles of bank administration. It is pointed out:

1. The administrative costs of commercial banking must be taken heavily into account in any comprehensive and satisfactory theory of the determination of interest rates.

2. As Mr. B. M. Anderson has contended, individual firm equilibria may be a more significant aspect of economic stability than aggregative equilibria and skillful credit granting must be relied upon to promote such stability.

3. Broad quantitative analysis in the monetary field, no matter how useful it otherwise might be, is often handicapped by serious difficulties of definition. The reader will recall, for example, how much controversy has developed out of the problem of determining for statistical purposes the ingredients of "the money supply." Since this is so, it is often necessary for economists to look for "qualitative" instead of "quantitative" phenomena in estimating the soundness of the credit situation. Certainly, this was true of the period preceding the stock market collapse of 1929.

4. Over-all aggregative type of analysis gives end results rather than an understanding of the processes that produced these results. From an over-all point of view it appears that the order of sequence runs from bank assets to bank deposits. To an individual banker, however, the relationship is quite the reverse. To show end results economists quite frequently adopt the device of assuming a single bank to represent the entire banking system. But in adopting such procedure economists should always remember that no head of a bank that comprises all would behave in the manner required of our independent unit bankers.

5. Prediction as to how bankers will respond to such developments as increased or decreased reserves is impeded unless it is possible to form some reasonable estimate as to how credit granters will behave. Bankers are living beings, with special biases and mores, and not just robots.

HAROLD L. REED

Cornell University

[2] *Money, Currency and Banking* (New York, 1942), p. 205.

Principles and Practices of Money and Banking. By CHARLES R. WHITTLESEY. (New York: Macmillan. 1948. Pp. xxiv, 688. $4.75.)

A dozen or more "beginning" textbooks in money and banking, written since 1946, are available to the instructor today. A range in dates of publication of five years is of no great significance if full use is made of the Federal Reserve Bulletin and other up-to-date materials distributed at small cost by the Board of Governors. Thus, the Whittlesey book can be considered as competing with the whole gamut of texts that range from those that are almost exclusively descriptive on the one hand to those that stress monetary principles to the exclusion of institutional details on the other. This book is fairly well in the center of the range.

Professor Whittlesey has had considerable experience as economist for insurance companies and banks. The principal justification for his textbook is that it is intended to "bridge the gap between the work of the college classroom and that of financial institutions" (p. vii). It is impossible to judge how successful the book is in attaining this objective, since the nature of the gap is not specified. Two observations, however, are pertinent: First, the book does not insult the intelligence of the reader by attempting to offer a training course in how to become a bank clerk; indeed, the book is at a fairly high and challenging level of ideas, rather than at a level of facts and assertions. In the second place, in some respects the book seems to have been written for the present as well as the potential financial executive. In particular, the interpretation of the sometimes controversial income and expenditure approach is skillfully designed to soften its impact on the potentially unsympathetic ear.

The strongest characteristic of the book is its treatment of the functional operations of commercial and central banking. Pre-Federal Reserve history and purely descriptive material are at a minimum; treatment of current problems of interest rates, portfolio management, and government fiscal policy as it impinges on banks and other financial institutions is unusually good. The careful student of this book will be able to read the financial press with considerable intelligence. The chapters on "The Structure of the Financial System," "Economic Change and the Banking System" and "Proposals for Banking Reform" are particularly interesting and unique.

Criticisms of a textbook are likely to reflect the personal idiosyncrasies of the reviewer as much as they are to show up flaws in the text. To this reviewer, the weakness of the book lies in its treatment of monetary theory and analysis, and their relationship to monetary and fiscal policy. There are two chapters devoted specifically to monetary theory: Chapter 5, "Theories of the Value of Money," which gives a good introduction to quantity versus income theories; and Chapter 23, "The Income Expenditure Approach to Monetary Theory and Fiscal Policy," which is included in a section entitled "Proposals for Monetary Reform." This organization reflects the basic emphasis of the book on the stock or quantity of money and its effect upon the level of prices, rather than on payments flows and their effects on employment as well as prices. To be sure, there are chapters on

both payments (Chap. 23) and employment (Chap. 24), but this analysis is pretty well confined to these chapters, and does not flavor the whole book as do the ideas in the chapter on the quantity theory of money. The position of the two monetary theory chapters is hardly conducive to an understanding of the relations between various approaches to money; in only one sentence is the cash balance approach mentioned as such. Generally speaking, the possible and desirable objectives of monetary and fiscal policy are not formally discussed, and the process by which monetary and fiscal changes may be expected to exercise their effects is inadequately presented.

Some of the author's definitions are confusing. Money is defined as anything that performs the monetary functions, and embraces both circulating and reserve money as well as the unit of account and the medium of exchange. The same money cannot perform all of these implied functions at the same time, for the functions themselves are not parallel in the same plane. Elsewhere, speaking of member banks, the author states: "Working reserves, regardless of their size, are never counted as excess reserves. The term applies exclusively to legal reserves, *i.e.*, to deposits at the Federal Reserve" (p. 124). This categorical statement forces him to refer to redundant funds other than Federal Reserve balances as "idle resources awaiting more permanent disposition" (p. 128) or as "'economic' as contrasted with legal" excess reserves (p. 132).

In spite of these criticisms, which some readers will consider as inconsequential or as not pertinent in referring to a beginning book, the student will find this text to be clear, well written, well organized and interesting.

SAMUEL E. BRADEN

Indiana University

Monetary and Foreign Exchange Policy in Italy. By FRIEDRICH A. and VERA C. LUTZ. Princeton Studies in International Finance, No. 1. (Princeton: Princeton University Press. 1950. Pp. 45. $1.00.)

In this pamphlet, Professor and Mrs. Lutz review and analyze the internal monetary developments, the balance of payments and the foreign exchange policy of Italy during 1946-49.

In no other country in the postwar period has internal monetary policy been so bitterly fought over as it was in Italy during these years. This dispute extended to the international field, with the U.N. Economic Commission for Europe and the Bank for International Settlements lining up on opposite sides. A similar lack of agreement manifested itself within the U.S. government and within ECA itself. (Even in the summer of 1950, the unauthorized remarks on this subject of an ECA official at a cocktail party in Rome led to a major diplomatic and governmental crisis in Italy.) There was even disagreement on the facts: one side arguing that Italy was in a severe depression, and the other that Italy was making a good recovery from the war.

This Lutz study is particularly valuable, therefore, as the analysis by independent students of the actual facts of the Italian situation (they found

that Italian progress in economic revival compares favorably with that of other European countries) and as to the policy pursued. As to the latter, the Lutz' study makes quite clear that far from having a deflationary policy, there was rapid monetary expansion in 1948 and somewhat slower expansion in 1949. The only valid criticism in the attacks which were made on Italian financial policy is that a slightly more liberal credit policy might possibly have been safely followed in 1949 (and more effective administrative action could have been taken to carry out the investment program financed by ECA counterpart funds). The bulk of the criticisms lacked appreciation of the realities of the situation. It was utterly unrealistic to expect Italy, whose people have seen 98 per cent of the value of the currency melt away and where direct controls are literally unenforceable, to be able to pursue "a tight-rope policy of full or over-full employment on the edge of inflation."

Also valuable is the section on Italy's foreign exchange policy. The Italian floating foreign exchange rate system has been one of most interesting and most successful of the postwar experiments. It was undoubtedly the inspiration for the similar French system. This discussion, too, should be of considerable interest to all students of international finance.

ANDREW M. KAMARCK

Washington, D.C.

Money in the Law, National and International. By ARTHUR NUSSBAUM. (Brooklyn: The Foundation Press, Inc. 1950. Pp. xxxii, 618. $8.00.)

This book is considerably more than a revision of the author's 1939 publication entitled *Money in the Law.* Besides being an extensive rewriting and rearrangement of the material in the earlier work, the present volume places much greater stress on the international aspects of money. The sections dealing with warfare and military occupation and with the International Monetary Fund are entirely new. Scattered references to the monetary history of the United States in the older volume have been consolidated with the principal section on that subject and now receive separate treatment as an Annex to the two main divisions dealing with the law of money in general and money in international law. The entire publication has been brought up to date in its legal aspects through the inclusion of recent legislation and court decisions on the subjects discussed.

Professor Nussbaum's principal objective has been the development of a general legal theory of money. By this he does not mean a theory of money in the economic sense. Instead, he wishes to present general principles which have been used, and may be used, by the legal profession in its approach to money and monetary matters. Although the discussion therefore proceeds from a legal point of view, the author feels that not only lawyers but also economists can benefit from the juristic treatment of money.

Professor Nussbaum must be classified as a nominalist in his conception of money (pp. vi, 26, 107-13, 142). His nominalist position is established through his explicit rejection of metallism (pp. 1-4, 22) and the State theory of money (pp. 5-10), and through his definition of the *monetary unit* as a "phenomenon

of social psychology" (p. 14). The term *money* he reserves for "the concrete object . . . which, irrespective of its composition, is by common usage given and received as a fraction, integer or multiple of" the *monetary unit* (p. 13). He states that "in the phenomenon of money the attitude of society, as distinguished from state, is paramount" (p. 8). Despite his emphasis on social usage and his rejection of the theory that money is necessarily the creation of the state, he refers to bank deposits as "substitutes for money" (p. 142) and confines money to coins and paper money (p. 16).

A reviewer[1] of Professor Nussbaum's 1939 volume has called attention to the inconsistency between the author's definition of money in terms of social usage and his exclusion of bank deposits from the category money. As that reviewer points out, "records of bankers and their customers should pass muster by any standard which admits greenbacks." In the present volume, Professor Nussbaum takes note of this criticism but does not modify his stand. Instead, he points to many differences in the law between bank notes and bank deposits, these differences stemming from the "fundamental distinction of tangibles and intangibles in law."

The present reviewer is not qualified to argue with Professor Nussbaum on a point of law. He can only suggest that, whatever the distinctions made by law between bank notes and bank deposits, there is something seriously wrong with any legal concept which would lead a court to exclude a country's principal medium of exchange from the category money. Certainly, bank deposits —or better, the checks themselves—are the principal medium of exchange in Anglo-Saxon countries. Certain statements by Professor Nussbaum, *e.g.*, the use of the term "money substitutes" and the emphasis which he places on the change from "corporeal" to "non-corporeal" when money is deposited in a bank, suggest that he thinks of deposits as arising largely through the placement of coin and paper money in a bank, and that he fails to appreciate the significance of deposit-creation through the bank's acquisition of earning assets. Such a failure leads, of course, to the notion that bank deposits "represent" true money, *i.e.*, coin and paper money, but are not money in their own right.

Although some portions of this book are of little interest to the economist, *e.g.*, the discussion of debt, which is treated strictly from the legal point of view, other sections are very worth while both for the historical material presented and for the high standard of economic analysis. The reviewer particularly recommends the discussion on the International Monetary Fund. Perhaps because of his greater attention to the detailed provisions of law, Professor Nussbaum is much more conscious of the limitations of the Monetary Fund than have been many economists whose enthusiasm for the noble goals expressed in the Fund's charter have led them to neglect the limitations imposed by the practical operation of the Fund.

The sections of this book which will be most interesting to economists are: Chapter I, Book I, where the author's concept of money is presented; Chapter III, Book II, where exchange control, money and war, and the International

[1] Albert Gailord Hart, in *The University of Chicago Law Review,* Vol. 7, pp. 195-97.

Monetary Fund are discussed; and the Annex, which provides a remarkably concise, yet accurate and inclusive, monetary history of the United States. In addition, students of economic doctrine will find throughout the book references to many interesting laws, customs, and theories on the subject of money.

GORDON W. MCKINLEY

Ohio State University

Public Finance

Effects of Taxation: Corporate Mergers. By J. KEITH BUTTERS, JOHN LINTNER, WILLIAM L. CARY, assisted by POWELL NILAND. (Boston: Harvard Business School. 1951. Pp. xviii, 364. $4.25.)

This study is the second in a series of investigations being conducted at the Harvard Graduate School of Business Administration on the effects of taxation on business. While the report is principally concerned with the influence of tax policy on recent mergers in industry, the authors have sought to compare in broader terms the nature of the three principal merger movements which we have experienced in this country. Their point of departure is the 1948 study of the Federal Trade Commission which attributed to the recent merger movement consequences comparable to those of the earlier combinations, and the criticisms of that study particularly in respect to the new rôle which rising tax rates have played in promoting mergers. The basic materials for the report were collected through a series of some 100 case studies of mergers, during the period of 1940-1947, in which tax considerations played some part.

The view is widely held that the necessity for meeting estate taxes has often forced the liquidation of small business enterprises and their merger with larger firms. Some have attributed to this fact an important part of the difficulties which small businesses have encountered in maintaining a supply of venture capital sufficient to survive competitively. An exchange of the stock of a small firm for the more marketable securities of a larger firm offers a particularly attractive means for meeting the contingencies of death or retirement, because of the tax savings involved. Whereas the attempt to provide for estate taxes through declaring dividends or redeeming stocks subjects these payments to personal income taxes, exchange of stock can often be arranged free of taxes; at most, accumulated profits are taxed at the capital-gains rates which are much lower than the income-tax rates.

The authors found, in the cases which they examined, that tax considerations of this sort have in fact been present in a number of recent mergers. They discovered, however, that the implications of tax motives are much broader than this and that the mergers which they examined were in most instances influenced by non-tax considerations as well. Some closely held firms were induced to merge with larger concerns partly in order to avoid the application of taxes on undistributed profits, and in order to enable the owners to diversify their investments without incurring the burden of

personal income taxes on dividends. These latter factors have been particularly important in the cases of firms which expanded greatly during the war, and lacked the capital to convert to peacetime uses and to maintain their competitive position in the face of the need for continuing technical research and the development of new markets. On the other hand, the authors found, the lack of competent management replacement was in the case of some well-established small firms a principal factor leading to their merger with larger concerns. And in some cases in which there was no immediate need to replace management, merger with a larger firm possessing specialized personnel was sought partly in order to lighten the burden of staff work necessary to comply with government regulations.

In almost all of the cases examined, the authors found that the combination of factors leading to merger was such as to make it difficult to isolate the importance of the tax considerations. According to their own appraisal, however, they concluded that taxes were of major importance in about 2/5 of the mergers involving corporations with assets between 15 and 50 million dollars; in 1/4 to 1/3 of those in the 5 to 15 million dollar class; in about 1/5 of the 1 to 5 million dollar enterprises; and rarely in the case of smaller firms. Their general conclusion is that the influence of tax considerations upon the merger movement of the '40s was not as great as commonly thought, and does not justify a major overhauling of the tax system.

Their comparison of the recent merger movement with the earlier combinations has led the authors to the view that: "the recent merger movement has produced very small increases, at most, in over-all levels of corporate concentration as measured by the distribution of total assets" (p. 272). They also contrast the mergers of the '40s with the earlier mergers in terms of the size of firms and the importance of the industries involved. In this broader survey, the authors found that there were approximately 6500 manufacturing and mining firms which merged with larger concerns during the '40s, representing total assets of about 5 billion dollars and covering about 5 per cent of the total assets of the firms in those industries which reported income taxes. These mergers increased the share already held by firms with assets over $50 million by less than 1/40 of their previous share, as contrasted with the several hundred per cent increases resulting from the mergers of the period 1879-1903. While the firms affected by the recent merger movement were mostly small, with assets averaging 1.7 million dollars, the merger movement of the earlier period was characterized principally by the combination of the larger firms in the affected industries, and this was to some extent true also of the mergers of the '20s. Moreover, while the mergers both of the '90s and the '20s affected the leading manufacturing industries of the period, few primary fields were involved in the mergers of the '40s. One further contrast drawn with the earlier mergers was the reduced rôle played by promoters and investment bankers and the lack of outside equity financing.

The authors are careful to limit the conclusions which they draw from their factual studies. They indicate that they have not assessed the effects

of these mergers on competition, and have not carefully examined all of the considerations which may have produced mergers during this period. In respect to the field studies which they conducted, they point to the marked predominance of mergers at the initiative of the selling firm; but, while they show that this fact may be taken to imply a lack of desire on the part of the purchasing firms to eliminate competition, they disclaim any such explicit conclusion in their appraisal of the recent merger movement. They are reluctant also to draw any clear conclusions from their comparisons of the recent and earlier merger movements.

This study represents a collection of case materials which will prove useful and suggestive to students of our antitrust policy. Within the limits which the authors have set for themselves, it throws an informative light upon the more important considerations which affect the survival of small-scale enterprise in the present competitive environment.

VICTOR ABRAMSON

Washington, D.C.

Gosudarstvennye Dokhody SSSR (Revenues of the USSR from State Sources). By A. K. SUCHKOV. (Moscow: Gosfinizdat. 1949. Pp. 192.)

This small volume in Russian is intended to serve as a textbook in Soviet schools for financial technicians. Its chief interest to the reader in the West lies in the fact that it affords a convenient and fairly rewarding glimpse of the Soviet cost-profit-tax-price structure as it emerged on January 1, 1949, after undergoing a most thorough and long-postponed overhaul. A literal translation of the Russian title—"State Revenues of the USSR"—would not be indicative of the contents, and the translation offered above is a weak compromise. The book actually attempts to cover those portions of the revenue of the Soviet treasury which are (proximately) paid in by the state-owned and co-operative enterprises. The chief of these is the well-known turnover tax, accounting for almost 60 per cent of all revenue in the consolidated[1] Soviet budget; also discussed are deductions from profits of state-owned enterprises, taxes on net income of co-operative enterprises (other than collective farms), receipts of machine-tractor-stations (which are on a gross basis in the budget), and various minor items of revenue. The chief taxes not discussed are those levied on incomes of individuals and on collective farms. A text[2] edited by the same author in 1945 covered the whole field of Soviet taxation.

The general economist might be interested to find in this book ample evidence of the high degree of *administrative* skill and precision developed by Soviet cost-profit-tax-price planners, and to reflect on the equally high degree of *economic* nonsense that much of this planning makes. Minutest aspects of the cost-price structure are covered by tax (and other) regulations, exceptions to regulations, and exceptions to these. But much of this effort seems to be directed toward preventing money prices from reflecting differentials in real

[1] *I.e.*, consolidated for all levels of government.

[2] A. K. Suchkov, ed., *Dokhody Gosudarstvennogo Biudzheta SSSR (Revenues of the State Budget of the USSR)*, (Moscow, Gosfinizdat, 1945).

cost. For instance, most commodities have uniform wholesale prices f.o.b. factory, either over all of the Soviet Union, or over broad zones, and regardless of the cost conditions of particular plants. Low-cost producers are sometimes subject to special taxes (*e.g.*, in the bread-baking industry, p. 82), but in any case, the state recaptures their profits. High-cost production is apparently occasionally still subsidized (*e.g.*, p. 88), although a much publicized purpose of the 1949 price overhaul was to eliminate subsidy payments. Average cost, and sometimes average cost for the industry as a whole, appears to be the chief determinant of the price to the factory.

Retail prices, incorporating high turnover taxes, are also uniform nationally or by zones. Thus, outright budgetary subsidies or partial exemptions from taxes are frequently granted to compensate for differences in costs of distribution, especially in the case of unfavorable locations (pp. 66-67). The Far North seems to continue to benefit particularly in this way.

The marginal calculus does not seem to have received any more recognition in the 1949 price reform than in the previous history of Soviet price administration. The opinion was recently ventured, apropos the 1949 price reform, that "the planning authorities in the Soviet Union have decided to make a fuller use of the price mechanism as an integral feature of their economic planning. Clearly, they have decided that while planning in terms of quantitative targets is essential, a functional use of the price mechanism is a necessary precondition to a sound and smoothly working economy."[3] If this is taken to mean only that by largely eliminating the dependence on huge subsidies (which were paid out to enterprises prior to 1949 because of sharply risen costs and outdated fixed prices), the new price structure gives managers an increased incentive for economizing in the use of resources within the rigid framework of their individual plans—then Kaser is quite right in maintaining that the new price structure represents an improvement. But if the above quotation is to be interpreted—as is suggested by the context of Kaser's article—to mean that Soviet planners have now made a concession to a "functional [resource allocating?] use of the price mechanism" (in the Lange-Lerner sense?), as against "planning in terms of quantitative targets," then neither Suchkov's book, nor any other Soviet source known to the reviewer, gives support to such a conclusion. Price administration is still far ahead of the economics of a price system.

Furthermore, the economist with special interest in the Soviet Union will also find in the book citations of some recent turnover tax rates which are still fantastically high by western notions (although they may have to be adjusted downward for the later reductions in consumers' goods prices) and he might draw inferences from these rates and from known retail prices with regard to cost conditions; indications of changes in methods of price calculation and of levying of turnover taxes associated with the 1949 price reform; and mention of new standard profit margins.

A final point: on the problem of whether prices paid by the armed forces

[3] M. C. Kaser, "Soviet Planning and the Price Mechanism," *Econ. Jour.*, Vol. LX, No. 237 (March, 1950), p. 91.

do or do not include turnover taxes, recently raised in this *Review*,[4] the book explicitly states (pp. 81 and 92) that they do pay—now, at least—such taxes on grain and on products of the food industry, except on fruit and vegetables. No explicit statement is made with regard to industrial consumers' goods (textiles and their products, shoes) and petroleum products—the two other major commodity groups procured by the armed forces which are at present subject to turnover taxes—so that no conclusion can as yet be drawn with regard to these goods.

GREGORY GROSSMAN

Russian Research Center, Harvard University

[4] N. Jasny, "The Soviet Price System," *Am. Econ. Rev.*, Vol. XL, No. 5, Pt. 1. (December, 1950), p. 860.

International Economics

The United States and the Restoration of World Trade. By WILLIAM ADAMS BROWN, JR. (Washington: Brookings Institution. 1950. Pp. xii, 572. $5.00.)

Since the end of the United Nations Conference on Trade and Employment at Havana in March, 1948 a substantial literature has been produced on the Charter for an International Trade Organization (ITO) and its *alter ego*, the General Agreement on Tariffs and Trade (GATT). Mr. Brown's study lacks the detailed examination of specific aspects contained in some of this literature, but it is the most comprehensive description, analysis and appraisal of these two international agreements that can be found in a single volume. It reflects the author's intimate knowledge of the negotiations as an unofficial observer and his first-hand study of the voluminous official records. As the title indicates, the ITO and GATT are considered in the broader context of the question of restoring world trade; the study thus provides a thumbnail sketch of commercial policy during the interwar period as well as a consideration of such matters as the relationship of the agreements to the postwar intra-European trade and payments system.

The last 170 pages are devoted to a rearrangement and slight rephrasing of the provisions of the ITO Charter itself for the benefit of those with a "technical and professional" interest in it, including, presumably, those who may be responsible for its administration. The length and complexity of this rearrangement affords an insight into the tortuous negotiations which gave birth to the Charter and also into the mentality of governmental representatives who—apart from honest differences of opinion in matters of theory and policy—must negotiate such an agreement with full consideration for the impact of general principles on specific national institutions and policies.

After a circumspect review of pros and cons, Mr. Brown argues that none of the alternatives available would better serve the basic objective of United States commercial policy, which he conceives to the the re-establishment of a multilateral nondiscriminatory world trading system, than the entry into force of both the Charter (ITO) and the Agreement (GATT). For the

benefit of those who may be understandably unclear over the distinction between the two agreements, it should be stated that the content of the GATT is confined to the commercial policy provisions of the Charter—relating to such matters as the permissible use of quantitative import restrictions to safeguard the balance of payments, exceptions to the rule of nondiscrimination, customs procedure, and the coordination of exchange control policy under the Fund Agreement with commercial policy—and thus excludes the provisions of the Charter dealing with such matters as full employment, economic development, international investment, cartels, and intergovernmental commodity agreements. An integral part of the Agreement are the schedules of tariff concessions negotiated simultaneously among the signatories in accordance with the most-favoured-nation principle. As Brown points out, it is the official United States position that the GATT contains only those parts of the ITO Charter designed to protect the value of the tariff concessions included in the Agreement. In effect, the Agreement may be regarded as an instrument through which members of the ITO, if it were in existence, would discharge many of their obligations under the Charter, particularly those relating to entering into negotiations for the reduction of tariffs.

When Brown's study was being written, the United States government had not yet taken its decision to withdraw the ITO Charter from consideration in the face of an apathetic if not predominantly hostile attitude on the part of Congress. Envisaging this possibility, he expresses a preference for adherence to GATT as second best.

With the passage of time, the issue of ratifying the Charter as distinct from adhering to GATT appears to have become largely academic. So far as the Charter's full-employment provisions are concerned, it is doubtful whether the pledges contained in the Charter would have more force than the recent resolution of the Economic and Social Council of the United Nations urging governments to adopt specific measures to achieve and maintain full employment and to go on record as accepting a quantitative target of tolerable unemployment. Certain provisions relating to economic development, fought over doggedly and supported on the theory of maintaining a balance in the Charter, have been superseded by the activities of the Technical Assistance Administration of the United Nations, the International Bank, and other agencies. With the launching by the United States government of a campaign—thus far with limited results—to negotiate bilateral treaties for the protection of private foreign investments, a similar fate has befallen the Charter's provisions relating to the treatment of international investment, the vagueness of which provided a favorite target for the United States business community. Of the topics covered in the Charter but not in the Agreement, only intergovernmental commodity agreements and cartels have not been largely taken care of by other international arrangements, at least in the general terms characteristic of the Charter. At any rate, during the current period of shortages the commodity provisions must have a remote, if not hollow, sound. Finally, as any knowing bureaucrat might anticipate, the international agencies already in the field have found

reason to undertake most of the economic research and fact-gathering functions that might have come within the purview of the ITO.

Nevertheless, the commercial policy provisions of the Charter and the Agreement are, after all, the most important, and it is on these—and the related provisions of the International Monetary Fund Agreement—that the postwar structure of international commercial and monetary policy rests, however precariously. Even in this respect, however, it must be admitted that the current preoccupation with the international repercussions of inflation and physical shortages has temporarily driven from the center of the stage the concern over possible conflicts between domestic full employment and development policies and the attainment of balance-of-payments equilibrium under a regime of nondiscrimination.

Views about the crucial provisions of the Charter relating to nondiscrimination or, perhaps better, the permissible degree of discrimination, fall broadly into three groups. One school fears, with Messrs. Balogh and Henderson, that the Charter provisions or, at least, the way in which the provisions are likely to be administered would restrict unduly the scope of "legitimate" discrimination particularly during periods of deflationary pressure or in conditions of severe structural imbalance. A second group regards the Charter provisions, taken in conjunction with the "scarce currency" clause of the Fund Agreement, as sufficiently broad to permit a reasonable degree of discrimination both during and after the postwar "transition period." There is, finally, a third school which is so preoccupied with the advantages of nondiscrimination and multilateralism that it has failed to allay the suspicions and fears of the first school or to provide much underpinning for the position of the second.

Mr. Brown deals at several points with the immediate reasons underlying the resistance of countries during the postwar period to relaxation of discriminatory import restrictions. In fact, he argues that the acquiescence by the United States and Canada in the intensification of discrimination against dollar imports by the sterling area during the crisis of 1949 was an example of how the ITO provisions would have operated were the Charter in force. While this may be true, one could have wished for a fuller and more penetrating treatment in the book of the whole subject of discrimination. The failure of the contracting parties of GATT during their negotiations in the autumn of 1950 to reach agreement concerning the relaxation of discriminatory quantitative restrictions in the sterling area and the subsequent breakdown of negotiations for the reduction of tariff preferences within the sterling area offer evidence that serious divergencies exist in this sphere. Clarification of the issues is all the more desirable since the debate has not been exclusively between the professional economists on the one hand and the politicians and special interests on the other. This is somewhat glossed over in Mr. Brown's study, perhaps because he is mainly concerned with overcoming American criticisms of the Charter. At any rate, it would appear good tactics for those concerned with the real losses of excessive bilateralism to convince the opposition that they appreciate that properly controlled discrimination may, under some conditions, permit a greater or

more stable volume of international trade than rigid adherence to the basic rule of nondiscrimination.

WALTER A. CHUDSON*

United Nations
New York

* The views expressed represent the personal opinions of the author.

The Dollar Shortage. By CHARLES P. KINDLEBERGER. (New York: John Wiley & Sons and The Technology Press of M.I.T. 1950. Pp. ix, 276. $4.00.)

Professor Kindleberger states in the preface that "the events of June 1950 in Korea have made even the title outdated." Fortunately, however, this harsh judgment does not apply to the main content of the book. The discussion of the concept of "dollar shortage," of American foreign trade and foreign investment, and of anti-shortage policies may indeed be of fleeting interest only. However, interwoven with that discussion emerges the outline of a highly original and important theory sketching the international aspects of economic development.

According to this theory, "equilibrium in the international balance of payments of a country depends upon its position in the evolutionary cycle and differs from static equilibrium where the current account . . . tends to equal zero." A "primitive undeveloped country" starts the cycle as a "young debtor which is borrowing at a rapid rate." It then becomes an "adult debtor which has a current account in balance." Still later, the country begins "repayment of old loans" as a "mature debtor," and emerges as a "young creditor" which extends loans to "young debtors." At the next stage it becomes an "adult creditor which neither lends nor accepts repayment on balance." Finally, the "mature creditor" exhausts its foreign investments by "accepting repayment of past loans from mature debtors." Having depleted its foreign capital, it becomes "economically senescent" and "may be regarded as eligible to start the growth cycle over again" (pp. 75-76 and 125-26).

The "transition between the various stages of the dynamic adjustment of a country appears to be brought about historically in large measure by war. . . . Aside from war, however, the evolution of the young creditor to the next stage of maturity will be brought about through the reduction of . . . relative rates of technological development. . . . The rise in incomes abroad produced by foreign investment and the impetus of the developmental process will narrow the gap until it closes" (pp. 78-79).

Cyclical fluctuations reinforce the tendency toward imbalance. The different positions of the various countries in the evolutionary cycle produce "tendencies toward secular stagnation and secular exhilaration," respectively; as a result, "some countries fail to adjust to deficits . . . whereas other countries fail to adjust to surpluses." These failures prevent the cyclical deficits and surpluses from being corrected according to the automatism of "Hume's law of trade"; it becomes therefore possible for a country to run

a surplus, and for another one to run a deficit, in times of both prosperity and depression (pp. 98-101).

Difficulties such as the "dollar shortage" are bound to arise if "a country whose current account acts like that of a young creditor" does not make sufficient international loans (p. 77). The answer to the question, however, why such difficulties did not arise until "the twentieth century regime of the dollar, . . . can at best be speculative" (p. 187). Professor Kindleberger stresses "the increased inelasticity of supply and demand which appears to characterize the world at present" (p. 191). In the United States, the rate of expansion is slowing down; in the rest of the world, the awareness of American standards of living makes it difficult to restrain consumption and stimulate capital formation. "With increased tendency toward disequilibrium, . . . the world has paid for its economic advance . . . through the loss of a quasi-automatic system of adjustment" (p. 188).

Professor Kindleberger has purposely neglected to verify his theory by historical analysis; he declares himself satisfied with producing "merely more hypotheses, unproved and in many cases probably unprovable because of being drawn up without regard for the idiosyncrasies of data" (p. 8). It is true that economic science is badly in need of new theories, even in the form of—provisionally—unproved hypotheses; eventually, however, any hypothesis will be discarded unless it is proved to be consistent with the data.

The problem arises, therefore, how such consistency can be proved or disproved. Professor Kindleberger states that since the end of the first World War the United States has been a "young creditor," and the United Kingdom a "mature creditor." It is not quite clear whether he does so only because the *balance of payments* of these countries conforms to his theoretical scheme or because the *general* economy of these countries gives the picture of "youth" and "maturity," respectively. If the theory is correct, it should be possible to correlate a country's *domestic* stage of development with its balance of *international* payments; but in order to do so, it would be necessary to define the various stages of development on the basis of criteria that are independent of the country's international position.

Two different criteria might be used for that purpose: the level of technological skill—as measured by per capita volume of capital or by per capita productivity of labor—which a country has reached, or the speed with which the acquisition of such skill is proceeding; in both cases, the factors might be measured either in absolute terms or in relation to the outside world. The first criterion seems inconsistent with the facts. The United Kingdom, prototype of the "mature" creditor country, has not reached a higher level of technological skill than the United States, prototype of the "young" creditor country. The second is insufficient if taken by itself. Technological progress in the United States may well be neither more nor less rapid at present when the United States is a creditor nation than it was fifty years ago when it was a "mature" debtor, or even a hundred years ago when it was a "young" debtor.

The best solution may therefore be a combination of the two criteria: the

difference between "young" and "mature" debtor and between debtor and "young" creditor nations may be based on the level of technological skill, with the rate of progress showing little variation; but the difference between "young" and "old" creditors may be based on the rate of progress irrespective of the level reached. The question arises, however, whether there is any necessary connection between the slowing down of the rate of progress and the achievement of a certain level. Professor Kindleberger's remarks about the reasons for the transition from "youth" to "maturity" seem to imply such a connection, somewhat in the line of the Ricardian concept of secular stagnation; but such an assumption would leave unexplained the fact that—whatever the present outlook for the U.S. economy—the United States certainly did not "mature" at the same level of technological skill as the United Kingdom.

It seems more likely, therefore, that the slowing down of the rate of progress is not simply the consequence of having reached a certain level of technological skill, but the result of factors less directly connected with technology; for instance, of factors involving social psychology, political institutions, or geographical position. If this is true, the "evolutionary cycle" would depend upon the entire complex of a country's social data, and would greatly vary from one country to another. In fact, "evolutionary cycles" might show even greater diversity than the traditional business cycles. This conclusion would be in agreement with Professor Kindleberger's general ideas which stress the close interrelation of the economic and non-economic aspects of social activity.

If Professor Kindleberger's theory is correct, international equilibrium presupposes strict international synchronization of economic development. A country can be a "young" debtor only if another country acts as a "young" creditor. Whenever the "young" debtor comes of age, another "primitive" country must take its place, or a "young" creditor country must in turn become "adult." Defects in synchronization would immediately lead to international disequilibrium.

In order to make this theory more than a mere tautology, it would not suffice to show that some country invariably starts or ceases to lend whenever another country starts or ceases to borrow. It should rather be shown that there is some mechanism coordinating the changes in debtor and creditor countries; for it would be nothing short of a miracle if it appeared that during all the centuries preceding the twentieth an almost perfect synchronization occurred by mere coincidence. In addition, it should be shown that this coordination was, at least in the past, inherent in the domestic development of the countries involved; for otherwise it would have happened frequently in the past—such as happened according to Professor Kindleberger in the United States during the 'thirties—that a country which had reached a certain stage of *domestic* development failed to act *internationally* according to the rules of that stage.

Two centuries ago, Hume showed that static equilibrium in the balance of international payments was reached—under certain conditions—by a

relatively simple automatism inherent in the market-price system. Similarly, it would now have to be shown that dynamic equilibrium could be reached —again under certain conditions—by some dynamic automatism. Once that automatism is analyzed, it would be possible to fit disequilibria such as the "dollar shortage" into the theoretical scheme by isolating the factors responsible for the presence and absence of the equilibrium conditions. In this connection, the world-wide switch from economic freedom to strict economic controls, administered by national governments on the basis of purely national considerations, might well play a decisive rôle.

Professor Kindleberger's theory is different from most or all recent theories of economic development in that it seems to leave no room for a change in the fundamental structure of economic society. It is not quite clear whether the author believes that technological forces are so strong as to make other social institutions seem unimportant in comparison, or whether he feels confident that the present organization of the Western world will prove more permanent than its critics assert.

In any case, the relations between domestic development and international balance pose as interesting and difficult problems in a centrally planned as in a market economy. The economic relations between the Soviet Union and its satellites might, for instance, be interpreted as those of a "young" creditor to "young" debtors. These relations are, however, obviously different from, say, the relations between the United States and Latin America. In fact, the very future of our society may depend upon the answer to the question of whether the Western or the Soviet system provides the better solution for the difficulties facing "young" debtors. A reasonable discussion of these questions requires, however, a clear understanding of the rôle played by economic development in the framework of the two competing systems.

Professor Kindleberger will be the first to concede that he has not yet provided a full-fledged solution to the riddle of economic evolution. However, his theory opens a vast new field for promising economic research.

J. Herbert Furth

Washington, D.C.

Survey of United States International Finance, 1949. By Gardner Patterson, with the cooperation of members of the Department of Economics and Social Institutions of Princeton University. (Princeton: Princeton University Press. 1950. Pp. x, 222. $1.75.)

The purpose of this experimental volume is to present in a discriminating, orderly and summary manner information on the activities, policies and programs of the United States which affected the general area of international finance during 1949. Major policies and programs starting from mid-1945, however, are treated adequately. Accordingly, the reader is given a survey of United States actions affecting the general field of international finance since the cessation of hostilities in Europe. The author has done exceptionally well in a very complicated and difficult area.

Broadly stated, the basic foreign policy of the United States has been to

foster economic, political and social freedom and stability throughout the world, although since 1948 this policy has been confined primarily to the non-Communist countries. In translating this broad objective into international finance and trade policies, the United States has advocated a multilateral non-discriminating world trade system; free convertibility of all currencies; reduction and, in some cases, elimination of trade barriers; and return of international finance to private enterprise.

The many programs to attain these objectives are reviewed in this volume. Important among those surveyed are (1) gifts and grants primarily through economic, relief and military programs such as the European Recovery Program, International Refugee and Children's Relief Program and the Mutual Defense Assistance Program; (2) public loans and investments through the Export-Import Bank, the International Bank and Monetary Fund and, in the case of Great Britain, the direct loan; (3) private loans and investments with reports on the Point Four Program, investment guaranties, tax adjustments and investment treaties; (4) exchange rate and gold policy with a review on the devaluation of overvalued currencies; (5) European economic integration with reports on the intra-European payments scheme and customs unions; and (6) United States import policy, including surveys on the Annecy Conference, the Havana Charter and purchases abroad for stockpiling.

In a brief but excellent concluding chapter (VIII), the author evaluates these and other programs. Careful, critical and fair analysis is made of United States aid programs and import policy, private investments, exchange rates, gold and foreign exchange reserves and European economic integration. The author concludes that for the year 1949 the record of achievement was very mixed and that in some cases it was too early to measure lasting results. He points out, for example, that the economic aid programs designed to increase productivity were offset, at least in part, by tying the gifts and loans to purchases in the United States. In other areas, *e.g.*, reduction of high tariffs, very little, if anything, was accomplished.

In determining the amount of economic aid, basic considerations have been the dollar exchange resources and the balance-of-payments positions of the recipient countries. Since the volume, too, emphasizes the balance-of-payments approach, a brief statement and evaluation of this approach as a tool of analysis and policy making would have been desirable. Although some of the descriptive materials and nearly all of the statistical data included are to be found in certain government publications,[1] the heart of this book is in the summarizations of legislative histories, basic issues and conflicts of interests, and in the critical comments of the author. It is hoped that in succeeding volumes such summaries and comments will be enlarged. The inclusion of a selected bibliography would have been helpful.

With perhaps one exception the author has reported on all the major

[1] See, for example, United States Department of Commerce, *The Balance of International Payments for the United States, 1946-48* (1950) pp. 275, and the March, June, September and December issues, each year, of the *Survey of Current Business*.

activities and programs. The exception is the freezing-unfreezing and vesting-divesting activities relating to foreign-owned assets which were in the United States at the outbreak of World War II. These wartime programs are still active. Although the amount involved (approximately $8 billion) and the impact of these programs on international finance are important, economists generally have neglected the field. In light of the creditor position and postwar aid programs of the United States and the dollar exchange shortages of the enemy countries (primarily Germany and Japan), the vesting of their relatively small amounts of prewar war assets appears incongruous. Failure of the United States to control foreign owned assets acquired after the cessation of hostilities contributed importantly to the flight of capital to this country.

Professor Patterson has an excellent understanding of the problems and materials in the field of international finance. The volume is cogently written, well organized and informative.

DONALD SHAM*

Washington, D.C.

* The reviewer is Secretary of the Office of Alien Property, Department of Justice; this Office administers the wartime controls over foreign assets. The views expressed in the penultimate paragraph are those of the reviewer and do not necessarily reflect those of the Department of Justice.

Le Système Monétaire de Bretton Woods et les Grands Problèmes de l'Aprés-Guerre. By ROBERT MOSSÉ. (Paris: Recueil Sirey. 1948. Pp. 153.)

The author says that his purpose is to present a clear exposition of the essential features of the International Monetary Fund and constructive suggestions for strengthening its position in the light of the actual problems of the world today. Part I describes the International Monetary Fund and Part II outlines the constructive suggestions. The book is not without certain good features but it falls short of the author's stated purpose.

The description in Part I does not give a clear picture of the essential features of the Fund. The description lapses frequently into a catologueing of the Fund's weaknesses, which makes Part II repetitive. Much space is devoted to the history of the bargaining over quotas and voting power. Some of the more technical clauses are discussed quite superficially.

The long discussion of the Fund's objectives is unproductive. Mr. Mossé believes a major concern of the United States was to protect the position of gold and the U.S. dollar in the world, while the principal concern of the other countries was to obtain dollar credits. He thinks the objectives stated in the Fund agreement are vague and ill-chosen. Instead of aiming at monetary stability, eliminating exchange restrictions, and providing resources to members, the Fund should have aimed at providing an equilibrating "mechanism," the interconvertibility of all currencies, and helping to meet the problems of the transition period. The discussion seems to be a quibble over words, implying some degree of misunderstanding of the relation between equilibrium, exchange rate stability, and exchange restrictions. The author

points out, of course, that much larger resources would have been needed to finance the transition period deficits.

The section on the Fund's reserves says that the Fund Agreement (a) attaches too much importance to the distinction between strong and weak currencies, (b) forgets that weak currencies have purchasing power in terms of goods, (c) should permit automatic purchases of currencies from the Fund within quantitative limits, (d) should require the United States to replenish the Fund's supply of dollars, and (e) should not confuse the problem of the Fund's currency holdings with that of international disequilibrium. These points are discussed more fully in Part II. The first comment listed above is odd in the light of those that follow.

In the introduction to Part II, Mr. Mossé summarizes the Fund's early history. He thinks that the United States and the United Kingdom scorned the Fund in the 1947 sterling convertibility crisis, that France unwisely failed to agree with the Fund in its 1948 exchange rate change, and that in general the Great Powers have tended to negotiate important matters outside the Fund. This point appears to be well taken and of the utmost importance in considering the Fund's activities to date, probably much more important than its inability to meet the dollar deficits which developed. The tendency to negotiate outside the Fund appears to the general public to have reached its climax in the September, 1949 exchange rate adjustments (after Mossé's book was published), and continues to be reflected in the lack of any known tie-in of the Fund with the Marshall Plan and the intra-European payments system.

Mr. Mossé's chief concern, however, is with what he considers the failure of the agreement to tackle the problem of equilibrium. He says the Fund provides no mechanism for re-establishing equilibrium; use of the Fund's resources does not automatically lead to internal deflationary pressures, the provisions putting pressure on creditors are hopelessly weak, the agreement is too easy on debtors, and even changes in exchange rates are of limited usefulness in restoring equilibrium.

Mr. Mossé's recommendations for the Fund are as follows. First, it must recognize that it is destined to function in a world of continued fundamental disequilibrium and in which there are many closed and planned economies. The Fund's principal objectives must be the re-establishment of equilibrium, the interconvertibility of currencies, and provision of an international means of payment which can expand and contract to meet the world needs. To achieve these objectives, it must (a) sell currencies in large supply at depreciated rates or require the United States to buy them for "supplementary" purchases, (b) give support to regional payment systems, (c) reflect the balance of all international transactions, and (d) oblige creditors and debtors to take corrective measures. Mr. Mossé recognizes that to do all these things the Fund will need much larger resources.

These objectives are sound but seem to be substantially those of the Fund agreement. Admittedly, however, the Fund's resources do not permit any very great expansion of the international means of payment. Mr. Mossé's

specific suggestions as to how to achieve these objectives almost all imply that the Fund's resources can be greatly increased which seems quite unrealistic. There are other serious weaknesses from a practical point of view. It is difficult to see how sales of weak currencies by the Fund at depreciated rates would accomplish anything that could not equally well be accomplished by a straightforward depreciation, or some multiple rate technique. And it is hardly conceivable that any country would permit such depreciation of its currency by the Fund without its approval. The United States would not commit itself in advance to purchase weak currencies, which would just be another way of putting more U.S. resources into the Fund. The feasibility of arranging for purchases which are really supplementary is open to grave doubts. Perhaps the least helpful suggestion is that the Fund should oblige debtors and creditors to take corrective action. As long as we live in a world of independent states we can try to persuade or induce a country to take corrective measures but we can not oblige it to do so. And the experience to date suggests that the member countries are not ready to even discuss with the Fund really vital problems, much less take its advice.

The idea that the Fund should have much larger resources is of course reminiscent of the Keynes plan. Undoubtedly with much larger resources the Fund could carry more weight if the big powers wished it to do so. All international transactions were to be reflected in the Clearing Union. Attractive as the plan was, there was never any possibility that the U.S. Congress would agree to make available up to $30 billion to an international monetary institution. The difficulties encountered in obtaining successive fiscal year appropriations for the Marshall Plan, even in the light of increasing political tension, and bolstered by exhaustive evidence of actual needs as they have developed, is ample proof of this fact. It seems quite clear today that the possibilities are even slimmer than ever.

ALICE BOURNEUF

Washington, D.C.

Industrial Organization and Markets; Public Regulation of Business

Investment, Location, and Size of Plant—a Realistic Inquiry into the Structure of British and American Industries. By P. SARGANT FLORENCE, assisted by W. BALDAMUS. Nat. Institute of Econ. and Soc. Research Econ. and Soc. Stud. No. 7. (New York: Macmillan. Cambridge: University Press. 1948. Pp. xiii, 211. $3.75.)

This imaginative analysis of the structure of industry has had a stimulating effect on research in this area in the past two and a half years. On the basis of extensive examination into industrial census statistics, the author has presented a number of significant measures of the inter-relationships between three of the significant aspects of industry: Size, Location, and Investment.

To measure the average size of plant in an industry, the author has determined in each case the so-called "prevailing size," that is, the modal group which accounts for half or more of the employees in the industry. In determin-

ing this typical size, the author has distributed plants among size groups which are progressively larger. For broad purposes of comparison, industries are classified in the main according to whether the prevailing size is small, medium, or large, with some use made of groups that are "smallish," and "largish."

As a measure of location pattern, the author uses an index of localization developed by him and extensively applied in the National Resources Planning Board study, *Industrial Location and National Policy*. This index compares the geographic distribution of one industry with that for industry as a whole. The computed indexes for 150 British industries are associated with the three major prevailing size groups. On the basis of simple contingency tables, the author reports a considerable relationship, but its significance seems to call for further analysis. With respect to the more localized industries, the plants tend to be of medium size. The explanation put forward by the author is that the plants in this group do not need to be smaller because transport costs do not require a scattering of plants throughout the market or among numerous materials sources, and they do not need to be larger because the production centers are big enough to yield the kind of economies obtainable within large plants.

Intensity of investment was measured, after trying other indexes, in terms of horsepower per worker. This would not appear to be a fully satisfactory measure since, as the author recognizes, the ratio between total capital investment and use of electric power varies widely among industries. The measure selected is in the main positively related among industries to the size of plant. The relationship does not apply, however, to industries which involve extensive weight-handling operations.

The author's conviction that these three characteristics of industry are closely inter-related is strengthened by a comparison of the operation of British and American industry. There are, however, questions which arise in connection with the determination of the typical size for an industry. These concern the homogeneity of operations among plants included in an industry, the dispersion of units about the modal group, the variations in size of plant in relation to the size of market served, and the variation in size according to the age of the firm. With respect to the first, the author surprisingly suggests that the homogeneity of industry be tested in terms of whether the intensity of investment is reasonably regular throughout the size classes, rather than in terms of similiarity of products. With respect to the second question, the collaborator presents an interesting chart which indicates clearly that within industries the intensity of investment, *i.e.*, horsepower per worker, varies considerably with size of plant.

The latter part of the study is concerned with the danger of industry's tending toward large-scale operation and larger firms. In this connection, the author recommends that public policy try to protect labor and consumers against monopoly which may develop where increased mechanization leads to large-scale operations, to greater efficiency, and finally, to monopoly. This is only suggested, since the author realizes that many other measures of efficiency and explanations of monopoly are necessary.

With respect to the encouragement of industrial dispersion, particularly of small units in small cities and towns, the author points out the inter-industry relations presented here make such dispersion difficult. Thus, he notes that industrial concentration consisting either of a cluster of smaller plants or of one or more large plants is likely to develop, unless the operation because of transportation costs is "oriented to," or tied to, local sections of the market or to scattered sources of materials. In some industries which tend to concentrate, the problem may be one of segregating those operations which can be dispersed, particularly if there are adjustments in regional freight differentials for moving semi-furnished materials as compared with those for moving raw materials. Although there are difficulties in influencing the geographic structure of industry, the relationships described require further analysis. Undoubtedly, there are many exceptions, and they should be examined in greater detail. Not only is there considerable variation from the general size-location relationship described in this study, but more specifically from the indicated degree of localization characteristic of medium-size plants.

The author has done an excellent service to industrial economists in presenting the relationships included in this book, and in supplying a mass of statistical information about the British as well as the American economy.

GLENN E. MCLAUGHLIN

Washington, D.C.

Economics of National Security. Edited by GEORGE A. LINCOLN, WILLIAM S. STONE and THOMAS H. HARVEY. (New York: Prentice-Hall. Pp. 601. 1950. $5.00.)

The *Economics of National Security* is the joint product of the members of the department of social sciences of the United States Military Academy. The authors do not attempt to make an exhaustive analysis of the economic, political or administrative problems of a defense or war economy and are not critically inclined. They have attempted, rather, to make a comprehensive survey of the experience of World War II, of World War I when relevant, and to provide a factual background which might serve as an introduction for a more detailed analysis of the many specific issues involved. This book is useful as a text for the uninitiated, not as a treatise for the professional economist.

In twelve chapters of somewhat uneven length the major issues are separately treated. Starting with an introductory chapter on the economic basis of national security the authors continue with successive chapters on the rôle and powers of the federal government; manpower; raw materials; industrial mobilization; transportation, communications and power; procurement policy; war finance; stabilization policy; the budget process; economic warfare and foreign aid programs; and finally a chapter on the outlook for the future. The legislative and administrative framework within which economic controls must operate is described in detail and carried down to the middle of 1950. Developments since the declaration of a national emergency and the passage of the Defense Production Act are not included because of the publication date, although the terms of the Act itself are included in an appendix.

This book has the disadvantage of any largely descriptive work; it does not stimulate much thought about the choices before us or the long-run implica-

tions of alternate policies. The failure of the authors to focus more sharply on the difficult problems of integration of the many separate elements of the economy and control system is a source of disappointment to one who has been recently frustrated by the failure of the current stabilization program to progress more favorably. Although the editors have been successful in eliminating many of the irritating features of a joint writing effort and have achieved a uniform style, they have not achieved an equally successful integration of the various chapters.

In view of the possibility that a partial mobilization may be necessary for some period of time, it is to be regretted that the authors, like most writers in the field, focus upon the economics of full-scale war rather than the less clearly defined state we are now in. The problems of policy formulation in the current situation are infinitely more complex and difficult than those of total war although the limitations of capacity to meet the demands of a material nature may be much less. For example, the determination of the extent to which basic industrial power should be expanded at the cost of immediate military end-product output, the question of stockpiling, the problem of international allocation of scarce materials, and the problem of price and wage controls are all more difficult to resolve and are more vigorously debated in a state of partial war than in the event of a struggle for survival. The political and administrative institutions which we wish to protect are also subject to strain and stress under current conditions and seem often to be poorly designed to cope with the problems which confront us. The authors have largely neglected this whole area although they are willing to recognize that the process of government administration of defense is fully as important as the pure economics of defense. If the cold war continues for some years, it is this type of problem which will be before us increasingly and may in the end spell the difference between victory and defeat. We are in grave danger if the deterioration of economic controls results in the breakdown of confidence in government with the possibility of serious consequences to morale, production, and the internal strength of the nation.

Special recognition should be given to the fact that the authors have maintained a high degree of objectivity and have not made any obvious concessions to the military organizations to which they are connected. If anything, this book leans over backward to stress the importance of the industrial backing necessary for the effective support of the men, ships and planes at the front. In view of the vast field they have chosen to cover this book is a commendable accomplishment and deserves respectful attention in spite of some of the limitations mentioned above.

Paul J. Strayer

Princeton University

Public Utilities; Transportation; Communications

Commercial Motor Transportation. By Charles A. Taff. (Chicago: Richard D. Irwin. 1950. Pp. x, 413. $6.00; college ed., $5.00.)

Charles A. Taff has ended the "Era of Neglect" of the motor carrier industry in the realm of economic and business literature. *Commercial Motor*

Transportation represents the first attempt at a comprehensive treatment, with the possible exceptions of F. K. Edward's *Principles of Motor Transportation* (1933) and the Association of American Railroad's *Highway Motor Transportation* (1945). The paucity of writing on motor carrier operation is partly attributable to the fact that students of transportation have been preoccupied with railroad problems and the glamour of airlines. Commercial motor operations persistently and unostentatiously forged ahead. Leaders of companies were too busy expanding to call attention to their progress in articles and books. Hence, the industry rose to huge proportions without being recognized by more than a couple chapters in books on principles of transportation.

Professor Taff's textbook involved extensive research. He had a difficult task of compilation in this pioneering effort. He missed nothing in the trade journals down to the date of reading page proof. The effort to be current and comprehensive frequently conflicted with the logic of the outline. Material is included more because it was published recently than because a worthwhile addition to knowledge was made. This weakness is understandable in an initial survey such as Taff has written from unequal source material—thus, second editions or books by others.

Another edition might analyze at some length why the railroad rate structure was so susceptible to truck competition. The issue is not to be understood by differences in costs or service so much as by understanding the obsolescence of the assumption of monopoly still inherent in rail classification. Transport coordination is wholly ignored.

The chapter dealing with the "Economics of Motor Transportation" reflects the confusion which prevails among transportation economists regarding the meaning of joint, variable, out-of-pocket and constant costs. Use of the term "marginal costs" or its counterpart in accounting terminology "differential costs" would have clarified the presentation. Transition from the theoretical chapter on demand and costs into the rate structure of the industry is somewhat incomplete.

The book is written cautiously which is perhaps how textbooks should be written. But this approach does not warrant avoidance of controversial issues or undue use of pious hopes. The chapter on Restrictions on Interstate Movement of Goods devotes pages to variations in state laws regarding weight limits but says nothing about why the limits vary, the actual effect on highways and taxpayers, the effect on motor carriers' operation, or how to achieve the uniformity which various groups want. The author describes urban transit companies but ignores their financial plight.

Taff supports the Interstate Commerce Commission in its reliance on the operating ratios in preference to rate of return in rate cases. He writes, "To allow a motor carrier only a fair rate of return on its investment is not adequate for the amount of risk involved in the proportionately larger amount of operating expenses incurred" (p. 111). Reform logically should lie in a higher rate of return to be considered "fair" rather than resort to the operating ratio.

The failure to be more analytical does not impair usefulness as a text. The factual material is complete and, after all, the professor ought to have some function to perform. Excellent illustrations and pleasing format add to the merit of the book. *Commercial Motor Transportation* will facilitate and enhance courses in Motor Carrier Transportation.

L. L. WATERS

Indiana University

Railroads Down the Valleys. By RANDALL V. MILLS. (Palo Alto: Pacific Books. 1950. Pp. ix, 151. $3.50.)

The literature on railroad development has been expanding rapidly in recent years. While the emphasis has been on the major roads, several volumes have dealt with smaller railroads and the special problems accompanying their growth and operation. The latest of these presents the history of five short-line roads in Oregon.

These roads suffered the difficulties common to similar lines elsewhere—inadequate capital to complete plans and insufficient traffic for low-cost operation. But the dependence of the Oregon lines upon lumber—while subjecting them to severe cyclical fluctuations in traffic—has provided a more satisfactory economic base than the mining upon which so many short lines have relied for their traffic.

Two of the roads are of particular general interest. The Oregon Pacific was started in 1872 as a major transcontinental link, to connect the Union Pacific in Eastern Oregon with Yaquina Bay, with the plan of making Yaquina the major harbor instead of Portland, and Corvallis the metropolis of the state. But with a route far inferior to that along the Columbia river, with inadequate financial backing and local traffic, and with serious mismanagement, the road struggled along for years without being able to complete its line over the Cascades, and eventually passed into the hands of the Southern Pacific as a minor feeder.

The City of Prineville Railway is one of the extremely few municipally operated intercity railroads in the country. Prineville, pioneer trading center of central Oregon, was by-passed by the lines built into this area around 1900 and saw its business taken over by the new town of Bend. Unable to interest private capital in a branch into the town, the latter finally succeeded in building its own line. But Bend's lead was not easily overcome, and trucking seriously reduced traffic. After long years of losses, increased lumber and wool production placed the road back on its feet, justified the investment, and provided the city with a substantial source of income.

In general, Professor Mills' book is a well-written contribution to the history of the railroads and economic development of the Northwest. It, however, contains little technical data on corporate history, traffic, or earnings.

JOHN F. DUE

University of Illinois

Land Economics; Agricultural Economics; Economic Geography

Future Food and Agriculture Policy: A Program for the Next Ten Years. By JOHN DONALD BLACK and MAXINE ENLOW KIEFER. (New York: McGraw-Hill. 1948. Pp. viii, 348. $4.25.)

The focal point of this book is Chapter 21. Here Black and Kiefer outline "A Program for the Next Ten Years." The remaining materials are designed to lead up to and lead away from this major attempt at policy formulation.

What can be said about the Black-Kiefer proposals? In general terms, they present a well integrated and comprehensive set of proposals, as the name of the book implies. Their over-all objective is that of adjusting production to consumption and consumption to production. Traditionally we rely on price (or prices) to accomplish this integrating job. And these food planners, too, would rely on the market to accomplish much of this work of integration, but they feel that the market has serious shortcomings in food and agriculture. Hence, they would formulate and place in operation a set of programs to help the market adjust consumption to production and production to consumption.

Specifically, they would give up production control on individual farms. In its place they would institute "farm and home planning." Through the vehicle of "farm and home planning," involving the technical and financial assistance of numerous agencies of government, Black and Kiefer hope to facilitate needed production-adjustments in agriculture. They would also place in operation consumption-adjustment programs—programs designed to insure more adequate diets such as school lunches, inplant feeding and stamp plans. Without going into the mechanics of the proposal, the authors present a neat device for lowering the level of price support as surpluses accumulate.

Two related themes are developed in the long build-up to Chapter 21: (1) the food consumption-production balance in the United States and (2) the food situation in foreign countries or areas. The first of these themes is developed in comprehensive and compelling manner. The second is developed in a superficial and unsatisfactory way. The authors develop, as fully as one would want in a general discussion, the food consumption requirements of the United States as determined by such factors as population size and growth, nutritional adequacy, and personal incomes. And these requirements are compared with past and potential production to obtain a measure of the food problem in the United States. This analysis is conducted in a planning sense (in terms of absolute amounts required and forthcoming) rather than in an economic sense (in terms of functional relationships).

The pages that follow the key programming chapter are concerned primarily with the execution of the authors' proposals. They point out that "much effort went into the preparation of this part of the study." And a reading of this section confirms that statement. Nonetheless, these closing chapters come as anti-climax. The nature of the food problem has been developed in full. And the authors have already told us what ought to be done. Hence, the further discussion of the rôle of the producer, the consumer, the distributor and governmental agencies is not likely to hold the interest of the average or casual reader.

There is another problem in this connection. It is difficult to write in a realistic fashion on the mechanics or execution of a proposed policy. A policy proposal must take the form of a statement *of what ought to be;* it is not a description of what is. And we know that policy rarely jumps full blown from the brain of one man (or co-authors); it emerges through conflict and compromise and often takes a form not recognizable to the initiators of that policy. Consequently, a detailed discussion of the mechanics or execution of a proposed line of action takes on a certain quality of unrealness.

With all due respect to Mrs. Kiefer who contributed importantly to the analysis of the food problem, we must recognize that the policy recommendations of this volume represent in large measure the reasoned conclusions of one man—John D. Black. The "program for the next ten years" represents the mature judgment of the dean of agricultural economists. That in itself should, and will, command the attention of workers in the field of food and agriculture. But more important, that rare combination of political acumen and economic analysis which are brought together in the person of Professor Black has produced a series of policy recommendations which, if adopted, would lead to better nutrition and better resource allocation *and which also, have some chance of political acceptance.*

WILLARD W. COCHRANE

The Pennsylvania State College

The Rural Economy of New England. By JOHN DONALD BLACK. (Cambridge: Harvard University Press. 1950. Pp. xxiv, 789. $7.50.)

This study was begun some twenty years ago. In the dedication, which is to the late Professor I. G. Davis of Connecticut State College (now University of Connecticut), the author refers to Professor Davis's lifetime effort to understand the economy of New England, and to his pioneer work in developing methods of analysis suited to that purpose. Many of these have been used in the present volume.

The study is, as the author well states, a group product. Not only have many of Professor Black's immediate assistants and associates participated in the assembling of data for it but, in addition, it reflects the interest and cooperation of the six New England agricultural experiment stations, and various federal agencies, in their concerted effort to coordinate and improve the research program for New England, which began to take shape just prior to 1930. It is in fact almost a compendium of conclusions they have arrived at on the basis of more than sixty years of research dealing with soils, production organization, marketing, transportation and similar problems.

The volume here presented is to some extent unique, and quite different from most of the earlier writings by the same author. It is primarily a "fact" book rather than an analytical study, though this characterization does it less than justice. Certainly it contains much that has analytical content, though of a different kind from that which has characterized the author's earlier books. Also he takes more account of historical change than he has been accustomed to do in other writings.

It is not easy to indicate the content and nature of the book in a brief re-

view, and certainly it does not lend itself to critical appraisal. The facts are there. If they are the facts the reader wants, there is little occasion for disagreement. If they are not what he wants, this is not the place to look for them. In other words, this is largely a reference book designed to provide a background and foundation for other studies rather than a book which presents some central theme leading to conclusions that are oriented to some particular point of view.

The final chapter, No. 36, on "Regional Policy and Program" is to some extent a deviation from that pattern. It deals, though quite briefly, with what to do about it. The general line of thought is much more fully developed in the same author's recent book *Future Food and Agriculture Policy* (with Maxine Kiefer). In both books there is considerable emphasis on planned action; a receptive attitude toward rather substantial participation in such activities by federal, state and county governmental agencies. In this respect the author is less fearful of what many would call paternalism than are many of his colleagues in the profession. In fact he is quite prepared to welcome a fairly large amount of guidance and control from government agencies and officials provided they are oriented to the right objectives, efficiently executed, and responsive to the wishes of the people for whom they are designed.

But the above comments overstress the content of the brief concluding chapter. The bulk of the volume, more than 700 pages, consists of a vast array of factual information on the current situation and historical trends, interspersed with relatively brief analytical paragraphs and sections. Chapter headings include such things as the following: What is New England; Natural Endowments; The People of New England; The Industry of New England; Trade and Transportation; Land Use History; Ownership of the Land; The Soils; and many others.

While there is a vast amount of factual and descriptive treatment of these many phases of the New England economy, it would be incorrect to characterize the book as a whole as "descriptive" unless that term is used with broader meaning than is usually attributed to it. Virtually every chapter contains in addition a substantial amount of explanation of the meaning of the data.

As a whole *The Rural Economy of New England* should provide an extremely valuable foundation for research programs in New England, not alone in agricultural economics but in many other lines as well. In addition, it provides a pilot study in the way of a new approach to regional studies that will undoubtedly be read with interest by many students in other regions.

MURRAY R. BENEDICT

University of California, Berkeley

Land Problems and Policies. Edited by JOHN F. TIMMONS and WILLIAM G. MURRAY. (Ames: Iowa State College Press. 1950. Pp. vii, 298.)

Not since the Conservation Movement of Theodore Roosevelt took on the proportions of a crusade has conservation of land and related resources been

the subject of so much debate as in the past few years. Everyone, it seems, believes in conservation, and agrees that conservation is wise use. But there agreement ends. The core of disagreement is two questions: what is wise use? how can it be achieved? This book attempts to bring light to a subject which too often is treated only with heat. Clarification does not mean simplification, however; quite the contrary.

Land Problems and Policies is made up of papers delivered by specialists in one or another of the pertinent fields at a Land Economics Institute held at the University of Iowa in the summer of 1949, with lectures given in the Graduate School of the United States Department of Agriculture forming three additional chapters. Since there can be no discussion of land problems which ignores the interrelationship among all resources, chapters are devoted also to population, water, forests, and wildlife, and they and other resources are touched on elsewhere throughout the book. The growing emphasis on recreational use of land is recognized by a chapter on that subject. Because land policies themselves create problems, much space is devoted to considerations affecting policy and factors and objectives to be kept in mind when policies are under consideration.

Even when not befogged by the emotionalism which characterizes much thinking about land and other resources, determination of what constitutes wise use poses very difficult problems. There are too many complexities and unknowns involved, too many resources and too many people directly or indirectly affected by them, too many different resource-use situations to expect anything approaching agreement even among experts. Nor is wise use the only problem to be resolved in policy deliberations. Implementation of policy—the how and how much of regulation—poses greater obstacles.

As a whole, the book does not attempt to say what policy should be, although some of the contributors verge on special pleading. It was published in the hope of stimulating discussion of land problems and policies, particularly with reference to the United States, and provides ample material, including expressions of different approaches and views, upon which to base discussion. It will not, however, serve as a corrective to the recent spate of books and articles on man and his misuse of the resources at his disposal, which are chiefly notable for their sweeping assertions of what should be and blanket condemnation of whatever is. The subject matter is difficult and has been made more so for the serious general reader by over-use of economic terms by some of the contributors. Since thoughtful citizens are already thinking about and discussing land and resource problems, it might have been well to couch the book in language they could understand. As it stands, it should serve as a useful reference for land economists because it condenses and analyzes in one volume material usually found scattered among a number of works.

E. LOUISE PEFFER

Food Research Institute,
Stanford University

Conservation of Natural Resources. Edited by GUY-HAROLD SMITH. (New York: John Wiley and Sons. 1950. Pp: xii, 552. $6.00.)

This book is a thorough revision of A. E. Parkins, J. R. Whitaker, (Editors) and Others, *Our Natural Resources and their Conservation,* first published in 1936, and revised in 1939. Professor Smith has replaced Professors Parkins and Whitaker as editor, and several new contributors have replaced those of the earlier editions, but the character of the book has not been greatly changed. Facts and figures have been brought up to date, and most of the chapters are excellently and interestingly written. The book is an important contribution to our literature on land economics and conservation. The price may seem a bit high, but the publishers have used a high grade of paper, and there are many maps, graphs, and excellent illustrations.

JOHN ISE

University of Kansas

Labor

Economics of Labor Relations. By FREDERIC MEYERS. (Chicago: Richard D. Irwin. 1951. Pp. xii, 435. Text ed., $5.00.)

The number of texts available for the introductory course in labor relations is reaching flood-tide proportions. All the more, therefore, must each new book justify itself as providing a fresh interpretation of familiar material or an incorporation of previously undigested data. It is on the basis of the former standard that Professor Meyers justifies his *Economics of Labor Relations.*

The approach which distinguishes this new text from its predecessors is its acceptance of the view that collective bargaining can be most fruitfully analyzed as a method of making business decisions arising in consequence of the employment relation. In the author's words, "The center of our problem is the making of decisions in the labor market and by labor institutions. The organization of this book was derived from the emphasis on the decision-making process."

The content of the book is organized broadly as follows. Professor Meyers first discusses the factors leading individuals to choose whether or not to enter the working force, and then the influences determining their specific choice of jobs. In both instances he has emphasized the noneconomic forces at work. "Our analysis in terms of gradual cultural change would suggest that the labor force might be expected to be quite insensitive to differences in levels of income and employment." "Undoubtedly some movement takes place, but if it is reluctant, unresponsive to classically assumed motivations, and planless in the setting of job differences, no degree of mobility will perform the purpose assigned to it by economic models."

Next, the characteristics of American employers are examined. The "typical American employer is a corporate employer, controlled by professional management relatively independently of ownership." Profitability is an important goal of such managements, but secondary to the objectives of continued independence, security and status of the managerial group itself. Thus at the

start the author emphasizes that the decision-making process in which he is centrally interested is dominated by noneconomic forces. We encounter once more the persisting and unfortunate dichotomy between economic theory, still largely resting on maximizing assumptions, and the specialized fields of study, like labor, which increasingly stress a broader social conditioning of behavior patterns. Meyers has forthrightly followed the latter course, drawing on recent studies to support his choice. While I find myself in basic agreement, I had the uneasy feeling in reading this book that society was being somewhat too freely shorn of those economic motivations which we have for so long been told were controlling.

There follows a rather sketchy discussion of individual bargaining, which leads into the subject of unions as decision-making institutions. A brief historical account of the rise of unionism in this country provides a basis for some significant generalizations about objectives, tactics, and patterns of growth. The succeeding chapter is given over to a discussion of characteristics of modern unionism, including an able presentation of the rôle of the local union, somewhat offset by an overbrief consideration of the national organization. Having thus been shown the parties to the decision-making process, we are next offered a nice description of the bargaining conference and some of the basic issues injected into it.

The author's approach leads him to regard labor legislation as social limitations on the bargaining process. First, there is legislation like the Norris-LaGuardia, Wagner, and Taft-Hartley Acts which affect the making of agreements. Here I would challenge the author's almost wholly negative position with respect to the Taft-Hartley Act, a position which overlooks the genuine problems to which certain provisions of that Act were—if not happily—addressed. A misinterpretation of the Act's limitation on the Board's discretion in defining the appropriate bargaining unit may suggest to some—though undoubtedly without warrant—that the author purposed to paint the 1947 legislation in a black light. Second, there are the so-called protective laws such as child labor, wage and hour, accident compensation, social insurance, which serve as a limitation on the content of collective agreements. The rôle of strikes, arbitration and grievance procedures in the resolution of disputes has a chapter to itself.

With the process thus described, we are next led to consider the workings of the process. The marginal productivity theory is offered by way of contrast to the author's vigorous position that wages cannot be considered in abstraction from the whole employment relationship. For my own part, I found this discussion on marginal productivity too brief to be convincing and clear—a consequence of the author's fear of "beating a dead horse." For example, his warning that "the student should be particularly aware of the internal inconsistencies of marginal productivity as a theory of employment" is preceded by only a one or two-sentence exposition of those alleged inconsistencies. There is then presented "at least the bold outlines of a framework of analysis which the author considers to be useful." This framework of analysis consists in the concurrent consideration of three elements applicable to both union

and management. The first is a "spectrum of demands," ranging from wants with strong welfare (economic) connotations at one end of the spectrum to those with strong power connotations at the other end. The concept of such a spectrum is joined by an analysis of the pressures lying upon the union and management, inducing the relative emphasis at one end of the spectrum or the other, and finally by consideration of their relative bargaining positions or strengths. "If one has an understanding of the relative values of demands at several positions in the respective spectra of the parties and the pressures that they are able to bring to bear to enforce their positions, some measure of predictability as to the results of bargaining is possible." This is a rather neat little framework of analysis for pedagogical or exploratory purposes, but the reference to its use for prediction endows it with a theoretical quality which is of course lacking.

Five chapters then describe the results of the process portrayed. In one Meyers examines the structure of annual earnings, hourly earnings, regional wage differences, wage differences by sex and race and between industries, ending with a somewhat inadequate examination of the evidence as to whether unions have influenced wages through collective bargaining. Trade union wage policy is discussed largely within the terms of the Berkeley group, as a consequence of political pressures within and between unions. The effects of changing wage rates are analyzed in the firm, in the market or industry, between industries, and in the economy at large. His conclusion is that, except for the firm in isolation, the effects of union wage actions are not identifiable. Supplementary wage practices are described, followed by a chapter detailing a variety of other provisions of collective agreements touching on the security of the individual and the union.

Skipping over the section on political activity, we conclude with three chapters that summarize and restate the major theme—that the employment relation under unionization introduces a new method of decision-making, namely, the collective bargaining process. The final chapter on public policy presents Professor Meyer's own convictions: "Our view of public policy is that it should serve to encourage the rapid extension of collective bargaining, leaving the parties as free as possible to make bargains within socially acceptable limits."

On the whole, this is a very teachable book and should be welcome to those who—as I do—conceive of collective bargaining as a method of making business decisions. In this respect it meets a need not heretofore supplied. There are a few drawbacks, to be sure, as in every book. At times the writing is uneven. A figure of speech (the "missionary" character of unionism) leads to a rather absurd interpretation of jurisdictional disputes on page 123. Some statements are stronger than the evidence warrants, and at times one has a feeling that there has been a "forced fit" of both fact and prediction to follow a predetermined plan, as, for example, when the Sherman Act is discussed as a restriction on the content of collective agreements, which it did not become until 1944, or when the Hutcheson case is made to appear as effective

protection against employer-union collusion. Such flaws are relatively minor, and I am sure that the book is one which most teachers of labor courses will examine with interest.

NEIL W. CHAMBERLAIN

Yale University

De Loonvorming in de Moderne Volkshuishouding. (Wage Determination in the Modern Economy). By J. PEN. (Leiden: H. E. Stenfert Kroese's Uitgevers-Maatschappij N. V. 1950. Pp. x, 322.)

Despite the impressive number of Ph.D.'s in economics who specialize in the field of labor, the field is not generally held in high esteem by those whose interests are primarily "theoretical." There are, of course, some notable exceptions who are struggling to isolate labor *economics* from labor *problems* and to escape from the tradition of institutionalism in this field—a tradition that *in extremis* almost denies that in economic theory there is anything useful or pertinent to labor's "problems." Dr. Pen's book on wage determination in the modern economy, subtitled a theory of collective bargaining, strengthens the position of the economic theorists in this area.

This short review note can only indicate the scope of Pen's contribution. A fuller account, by no means detailed enough, appears as a summary in English in the book itself. Briefly put, he suggests a theory of bargaining that explains the process by which the individual wage rate is agreed upon; or to quote from the summary, ". . . what factors determine the result of the wage bargains, given the ophelimity functions [union and employer preference schemes]?" It thus follows the course charted by Jevons and Edgeworth who saw wage rates as resulting from the interaction of isolated pairs rather than from the impersonal forces of the perfectly competitive market. In providing the background for the development of his theory, Pen treats the reader to a penetrating survey of the appropriate literature.

De Loonvorming . . . should be translated into English, for this will give the book the widespread critical attention it deserves and will insure that its readily acceptable features will be quickly incorporated into wage theory. Some of the remaining questionable aspects, then, will be subjected to the tests of controversy that have so often led to advances in economics.

WYTZE GORTER

University of California, Los Angeles

Readings in Labor Economics. By FRANCIS S. DOODY. (Cambridge: Addison-Wesley Press. 1950. Pp. viii, 481. $3.75.)

The recent appearance of books of readings in labor subjects is a sign that the labor field has attained at least the kind of respectability which is measured by volume of literature and the number and size of college courses. The present volume is small as books of readings go. It is designed to supplement a regular text and the price has been kept down by use of photographic reproduction methods.

The volume's modest size and the editor's decision to reproduce articles in full, only thirty-five articles in all, make the potential user very dependent upon the editor's selective judgment. His emphasis is on wage subjects. Fourteen articles deal with structural, productivity, employment, and public-policy aspects of wages. Three more articles cover forms of wage payment. These seventeen articles account for well over half the pages in the book. Five articles deal with aspects of social security. Little more than a fourth of the volume is left for such areas of the field as the non-wage aspects of labor relations, labor law, and unionism. In fact, the last two areas are virtually not covered at all. This choice of materials does not reflect the prevailing interests, needs, or capacities of the great majority of students this reviewer encounters in his classes.

A book of readings in labor unavoidably suffers from a rather high rate of obsolescence in these times of eventful change in the American labor scene and abundant new research output. In the present volume factual surveys of incentive, premium, sick leave, and vacation-pay practices suffer particularly from this difficulty. Even the summary report of the fact-finding board in the 1949 big steel dispute is beginning to seem ancient history. The impression of obsolescence is heightened because much significant recent research in wages and industrial relations is not represented and because eighteen of the thirty-five articles date from 1945 or earlier. For example, the most recent of the articles on wages and productivity was written in 1946. Horace Davis' article on the theory of union growth, the only article, incidentally, which even touches on the labor movement, was written in 1941. The principal articles on union wage policies were written in 1940, 1943, and 1945, respectively.

One can question some of the editor's selections on other grounds as well. Of the two articles on strikes, one is Dale Yoder's detailed but inconclusive statistical comparison of strike data with various indices of economic change. One of the articles on wages and employment is a study by Waldo Fisher of wage, hour, employment, and output changes in the soft coal industry from 1934 to 1937. The only analytical article on multi-employer bargaining is a discussion by David McCabe which is confined to the wage aspects of industry-wide systems. Each of these pieces has its own intrinsic merit as an academic inquiry but each lacks the general information or broad relevance which one looks for in books of this kind. These examples point up what is a serious and inherent shortcoming of all books of readings taken from academic journals. Journal articles are not written for students and especially not for the students who are most likely to inhabit large university classes for which books of readings are intended. They tend to be too technical, to deal with one facet of a problem rather than the problem as a whole, to be more specific or detailed than is necessary for the general student, and to be written in a style and language which do not make for student interest or readability.

As a final suggestion, it would add meaning to the readings if the authors were given brief identifications.

VAN D. KENNEDY

Institute of Industrial Relations
University of California, Berkeley

Population; Social Welfare and Living Standards

The Population of India and Pakistan. By Kingsley Davis. (Princeton: Princeton University Press. 1951. Pp. xvi, 263. $7.50.)

This book by Kingsley Davis is the fifth of a series of studies on world population undertaken by the Office of Population Research of Princeton University. The first four volumes dealt with the population of Europe, and specific areas within it; and upon publication took their places as definitive works on their respective regions. This latest volume does the same for India and Pakistan, and is to be followed by Irene Taeuber's study of Japanese population.

Since Professor Davis is a sociologist rather than an economist, his book is essentially a social study rather than an economic study, and only two late chapters are devoted primarily to economics. But for India such a distinction between subjects, while valid otherwise, is not very meaningful in a study of potential economic and social development. Whereas in the West social problems or characteristics may often be treated as a constant in the short run in dealing with economic problems (especially since economic theory is based upon Western social concepts), for India this is difficult if not impossible. The problem of population—both size, potential growth, and composition—is a major variable, if not *the* major one, in any estimate of economic problems and future of the area. Furthermore, as already evidenced by prewar Japanese experience, social characteristics and attitudes will certainly color any program of economic development, and may seriously modify purely economic considerations. Professor Davis realizes this interrelationship, and constantly stresses the close connection between the social problems and their solution, and the economic problems.

The study of population problems proper, which comprises the first twenty chapters of the book, is a model of its type. The major subjects treated are: size of population and past history, the birth and death rates and their variations, estimates of future population growth, the problem of migration both external and internal, the growth and character of urban areas, levels of education and literacy, the caste system, and religion. In all of these fields this book will unquestionably be considered the best single American source of material for future students. But this section is far beyond a summation of existing statistics. It is also a detailed and careful critique of those statistics, and an imaginative treatment of the available statistics to develop whatever material may be present and to fill in the numerous gaps which exist. When this is finished it seems to this reviewer that there is little that can be added by a non-Indian.

Furthermore, Professor Davis never treats his material in an isolated fashion. Rather he constantly emphasizes the relationship between the social variables he is discussing and economic problems; and he stresses the difficulty, if not impossibility, of dealing with any one of the variables, such as the death rate, without also considering economic changes and their effects. He also touches briefly upon the effects of such social characteristics as caste, the attitudes toward the village, religion, etc. upon economic change. It would

be a most valuable contribution for economists to examine the influence of these social variables upon such economic factors as entrepreneurship, capital formation, labor migration and turnover; and to compare the results with Western experience.

The treatment of economics proper is restricted to the last two chapters and is primarily a brief summation, rather than a definitive study. While the reviewer in general agrees with the author's conclusions, certain critical comments are worth making. First, the discussion of overpopulation in no place cites, or seems to use, the numerous economic analyses of the problem of "optimum" population which might have been valuable. Second, Professor Davis considers heavy capital-using industry as more desirable than light industry. But he does not examine the fields in which India might have a comparative advantage, nor whether concentration in heavy industries might be less economical and therefore possibly less desirable, since India has a great supply of labor relative to capital or land. Thirdly, the treatment of overpopulation on the farm is not complete if it essentially states that the farm crop—or a larger one—can be produced by fewer workers and more capital; existing or potential economic alternatives to farm work should also be presented, and costs must be considered.

But these considerations apart, one can only conclude that Professor Davis' study is an indispensable addition to knowledge of the area, at the same time that it is a creative contribution to the study of social problems. And this review might well close by mentioning the ease of style which adds greatly to the readability of such a scholarly work.

George Rosen

Washington, D.C.

Unclassified

Social Science Research Methods. By Wilson Gee. (New York: Appleton-Century-Crofts. 1950. Pp. vii, 390. $4.00.)

Difficult indeed is the task of an author who attempts a critical presentation of the methods of the social sciences. The range of competence demanded for the task is only one of the hurdles to be surmounted. In the text under consideration, Wilson Gee has sought to meet the problem by assembling what amounts to a pastiche from authoritative writers in the several fields. In his preface he explains that "the extensive use of excerpts is made with deliberate design and of necessity. It is impossible for one person to speak with authority on so wide a range of intellectual concern as this book represents. Most of the value which this volume has resides in the selection and organization of authoritative, pertinent, and provocative materials."

The author has obviously devoted much labor to sifting the literature for these excerpts and fitting them into an inclusive structure. The result, however, seems to me hardly successful. The prospective social science student will be little more likely to interpret or devise research more intelligently for reading this book—if, indeed, he is not discouraged from any further contact

with what is likely to appear to him a dry, contentious, and unpromising business.

The book starts by considering the nature, scope, and current trends of social science and the several social sciences. A trio of chapters then deal with the meaning of research, scientific method, and the logical methods common to scientific thought. There follow chapters on widely employed technical methods: the case method, the statistical method, the experimental method, and the survey method. A final chapter treats social science research organization.

The excerpts embodied in the volume present a virtual time-capsule of the controversies, admonitions, and pronunciamentos that have bulked large in social scientists' talk about social science during the last thirty-odd years—with a disproportionately heavy weighting from the earlier portion of the period. The old controversies about the sense in which social science is or is not scientific, whether it should be normative or descriptive, whether it can or should seek prediction, etc., are all there. The author attempts to steer a judicious course among his authorities, in effect seeking to define the nature, common problems, and methods of the social sciences by consensus.

For an already sophisticated student, there may be some value in retracing some of the lines of contention that have led to the present concerns of the social sciences. Neither the neophyte—for whom the book is clearly intended—nor the sophisticate, however, will gain from the book much sense of the framework of assumptions and methodology underlying the recent burst of theoretically oriented research in at least several of the social sciences. Speaking as a social psychologist with some familiarity with current developments in sociology, anthropology, and political science, I hopefully believe that we are in the process of outgrowing the stage of discussion represented in this book. The task of identifying for the beginning student and for the specialist the assumptions and strategies that are proving fruitful as we go about our common business of research and theory-building still needs doing.

A word about the treatment of specific technical methods. Gee wisely restricts himself to broad categories of methods having a wide range of application, rather than attempting to treat more specialized techniques. Again, however, his use of excerpts from authorities precludes a sharp treatment of the underlying assumptions of an approach, the principal areas of application, and the major pitfalls besetting the researcher who relies on it—though most of these considerations are embedded in one way or another in his materials. Important recent work is not reflected in at least some of his discussion. For example, his treatment of interview and survey methods relies entirely on writings about the older social survey, and does not take into account the development of the modern sampling interview survey and its associated questioning techniques. His treatment of the experimental method, devoted mainly to second-best approximations that are hardly experiments at all in the stricter sense, does not do justice to the promise and feasibility of strict experimentation in the social sciences, as demonstrated only in recent years. No reference, thus, is made to the methods underlying the study of communica-

tion and group process by the followers of Kurt Lewin, "action-research" on existing programs of social change, or recent laboratory studies of economic behavior.

But perhaps a more fundamental question needs to be raised. How are we to make our graduate students competent producers and critics of research in their own social science, and potential collaborators with other social scientists? Not, I fear, from a deductive survey in which scientific method is considered in one chapter and particular techniques, divorced from application, are treated in succeeding ones. The only satisfactory substitute for experience in doing research, it seems to me, is the critical study of *cases* of actual reported research, in which methods are seen in context and their assumptions, consequences, and degree of appropriateness exposed for student evaluation. However valuable an abstract treatment of social science methodology might be as a summary of existing practice for the profession, its use as a text in graduate training would remain highly questionable.

M. BREWSTER SMITH

Vassar College

TITLES OF NEW BOOKS

Economic Theory; General Economics

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BLODGETT, R. H. *Principles of economics.* 3rd ed. (New York: Rinehart. 1951. Pp. xx, 698. $5.)

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DIVISIA, F. *Exposés d'économique.* I, *Introduction générale—l'apport des ingénieurs français aux sciences économiques.* (Paris: Dunod. 1950. Pp. xii, 157.)

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KATONA, G. *Psychological analysis of economic behavior.* (New York: McGraw-Hill. 1951. Pp. ix, 347. $5.)

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SCHLATTER, R. B. *Private property.* (New Brunswick: Rutgers Univ. Press. 1951. Pp. 284. $2.50.)

SCHUMPETER, J. A. *Imperialism and social classes.* (New York: Augustus M. Kelley, Inc. 1951. Pp. xxv, 221. $3.)
A volume, edited by and with an introduction by Paul M. Sweezy, containing two essays "The Sociology of Imperialisms" and "Social Classes in an Ethically Homogenous Environment." The essays, originally published in German between the two world wars, have been translated by Heinz Norden.

———. *Ten great economists—from Marx to Keynes.* (New York: Oxford Univ. Press. 1951. Pp. xiv, 305. $4.75.)

With the exception of the essay on Marx, these essays were written in the period from 1910 to 1950 and appeared in various economic journals.

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WEBER, M. *Gesammelte aufsätze zur wissenschaftslehre.* 2nd enlarged edition collected by Johannes Winckelmann. (Tübingen: Verlag J. C. B. Mohr (Paul Siebeck). 1951. Pp. 688. DM 37, 80.)

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CAMMANN, S. *Trade through the Himalayas—the early British attempts to open Tibet.* (Princeton: Princeton Univ. Press. 1951. Pp. x, 186. $3.50.)

DELAVIGNETTE, R. *Freedom and authority in French West Africa.* (New York: Oxford Univ. Press, for the International African Inst. 1950. Pp. vii, 152.

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MARTINEZ, J. F. *Economic developments in Brazil, 1949-1950.* Also in Spanish. (Washington: Pan American Union. 1950. Pp. 69. 50c.)

MORGENTHAU, H. J. *Germany and the future of Europe.* (Chicago: Univ of Chicago Press. 1951. Pp. viii, 180. $3.50.)

A presentation of the fourteen lectures of the Twenty-sixth Institute of the Norman Wait Harris Foundation of the University of Chicago held in the spring of 1950. Four lectures are on economic topics.

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SHANNON, F. A. *America's economic growth.* 3rd ed. First ed. entitled *Economic history of the people of the United States.* (New York: Macmillan. 1951. Pp. x, 967. $6.)

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Contains economic articles on the Caribbean area, by George Wythe, and Brazil, by W. H. Spiegel.

6th Quarterly report on Germany by the U.S. High Commissioner for Germany, Jan. 1-Mar. 31, 1951. (New York: U.S. High Commissioner for Germany, APO 757-A. 1951. Pp. 165.)

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NOTES

SIXTY-FOURTH ANNUAL MEETING OF THE AMERICAN ECONOMIC ASSOCIATION

Hotel Statler, Boston, Massachusetts, December 26-29, 1951

Preliminary Announcement of the Program

Wednesday, December 26

12:00 M. *Luncheon Meeting of the Executive Committee*

2:30 P.M. INTERNATIONAL TRADE THEORY

Chairman: R. B. BRYCE, Department of Finance, Ottawa, Canada

Papers: The Present State of the Theory of International Values
JACOB VINER, Princeton University
Title to be announced.
ARTHUR SMITHIES, Harvard University

Discussion: G. A. ELLIOTT, University of Toronto
J. J. POLAK, International Monetary Fund

AGRICULTURE DURING REARMAMENT: Joint session with American Farm Economic Association

Chairman: THEODORE W. SCHULTZ, University of Chicago

Papers: Appraising the Demand for American Agricultural Output
ELMER J. WORKING, University of Illinois
American Agricultural Policy During Rearmament
KARL BRANDT, Food Research Institute

Discussion: WILLIAM H. NICHOLLS, Vanderbilt University
KENNETH H. PARSONS, University of Wisconsin

8:00 P.M. AMERICAN FOREIGN AID PROGRAMS

Chairman: HOWARD S. ELLIS, University of California

Papers: European Recovery and the Problems Ahead
RICHARD M. BISSELL, JR., Massachusetts Institute of Technology
Raw Materials, Rearmament, and Economic Development
EDWARD S. MASON, Harvard University

Discussion: DON D. HUMPHREY, Duke University
WALTER S. SALANT, Council of Economic Advisers

GOVERNMENTAL POLICY ON BUSINESS PRACTICES

Chairman: THEODORE J. KREPS, Stanford University

Papers: Anti-Trust Policy During Rearmament
CORWIN D. EDWARDS, Federal Trade Commission
Government Aid to Business Expansion
EDWARD C. WELSH, Reconstruction Finance Corporation

Discussion: MELVIN DE CHAZEAU, Cornell University
KERMIT GORDON, Williams College

Thursday, December 27

9:30 A.M. ECONOMIC THEORY AND PUBLIC POLICY

Chairman: JOHN M. CLARK, Columbia University

Papers: The Future of Economic Liberalism
OVERTON H. TAYLOR, Harvard University
An Historian's Perspective on Modern Economic Theory
W. W. ROSTOW, Massachusetts Institute of Technology

Discussion: VINCENT W. BLADEN, University of Toronto
PAUL T. HOMAN, University of California at Los Angeles

ECONOMIC PROBLEMS OF MILITARY MOBILIZATION

Chairman: DONALD H. WALLACE, Princeton University

Papers: The Planning of Military Requirements
COL. GEORGE A. LINCOLN, United States Military Academy
Procurement Policies—World War II and Today
JOHN PERRY MILLER, Yale University

Discussion: HARRY E. HOWELL, New York City
J. PHILIP WERNETTE, University of Michigan

REGIONAL ECONOMICS: Round table joint session with the Econometric Society

Chairman: CALVIN B. HOOVER, Duke University

Paper: Title to be announced
RUTLEDGE VINING, University of Virginia

Discussion: MORRIS E. GARNSEY, University of Colorado
EDGAR M. HOOVER, Council of Economic Advisers
STEFAN ROBOCK, Tennessee Valley Authority
HARRY S. SCHWARTZ, Federal Reserve Bank of San Francisco
NATHANIEL WALLMAN, University of New Mexico

2:30 P.M. ISSUES IN METHODOLOGY: Joint session with the Econometric Society

Chairman: FRITZ MACHLUP, The Johns Hopkins University

Papers: The Impact on General Economics of More Realistic Theories of the Firm
K. E. BOULDING, University of Michigan
Institutionalism and Empiricism in Economics
FRANK H. KNIGHT, University of Chicago
Economic Theory and Mathematics—An Appraisal
PAUL A. SAMUELSON, Massachusetts Institute of Technology

Discussion: ALLAN G. GRUCHY, University of Maryland
W. W. LEONTIEF, Harvard University
Another to be announced

INFLATION CONTROL IN THE UNITED STATES

Chairman: EDWIN G. NOURSE, Washington, D.C.

Papers: Recent Experience with Monetary-Fiscal Measures
WOODLIEF THOMAS, Federal Reserve Board
Reflections on a Year of Price Controls
G. GRIFFITH JOHNSON, Economic Stabilization Agency

Discussion: ALBERT G. HART, Columbia University
R. B. HEFLEBOWER, Northwestern University

PUBLIC UTILITIES, TRANSPORTATION, AND SPATIAL ORGANIZATION (Program prepared by C. Emery Troxel, Chairman of Transportation and Public Utilities Section)

Chairman: C. EMERY TROXEL, Wayne University

Papers: Criteria for the Establishment of an Optimum Transportation System
RALPH L. DEWEY, Ohio State University

The Optimum Geographic Size of a Rate-Making Unit for Electricity
WILLIAM F. KENNEDY, Santa Barbara College

Discussion: EDMUND A. NIGHTINGALE, University of Minnesota
JOSEPH R. RANSMEIER, Dartmouth College

8:30 P.M. PRESIDENTIAL ADDRESS

JOHN H. WILLIAMS, Harvard University

Friday, December 28

9:30 A.M. FISCAL THEORY

Chairman: ROY BLOUGH, Council of Economic Advisers

Papers: An Appraisal of Current Fiscal Theory
PAUL J. STRAYER, Princeton University
The Anti-Inflationary Implications of Alternative Forms of Taxation
RICHARD B. GOODE, University of Chicago

Discussion: CARL S. SHOUP, Columbia University
HAROLD M. SOMERS, University of Buffalo

THE THEORETICAL ANALYSIS OF ECONOMIC GROWTH

Chairman: HAROLD A. INNIS, University of Toronto

Papers: The Theoretical Analysis of Economic Growth—An Econometric Approach
EVSEY D. DOMAR, The Johns Hopkins University
Economic Growth—Econometric Models in Relation to the Social Setting
DAVID M. WRIGHT, University of Virginia

Discussion: THOMAS C. SCHELLING, Office of Special Assistant to the President
JOSEPH J. SPENGLER, Duke University

WAGES, MANPOWER, AND REARMAMENT: Joint session with the Industrial Relations Research Association

Chairman: J. DOUGLAS BROWN, Princeton University

Papers: Wage Stabilization
CLARK KERR, University of California
Problems in the Allocation of Manpower
WILLIAM HABER, University of Michigan

Discussion: DALE YODER, University of Minnesota
Another to be announced

12:15 P.M. LUNCHEON MEETING: Joint session with the American Finance Association

Chairman: To be announced
Speaker to be announced

2:30 P.M. GENERAL FACTORS IN ECONOMIC GROWTH IN THE UNITED STATES: Joint session with the American Statistical Association

Chairman: ARTHUR F. BURNS, Columbia University and National Bureau of Economic Research

Papers: Relation of Capital Formation to National Product
SIMON KUZNETS, University of Pennsylvania and National Bureau of Economic Research
Secular Change in Income Distribution
GEOFFREY H. MOORE, National Bureau of Economic Research

The Rôle of Productivity in Economic Growth
FREDERICK C. MILLS, Columbia University and National Bureau of Economic Research

Discussion: JAMES S. DUESENBERRY, Harvard University
FRANK R. GARFIELD, Federal Reserve Board
RAYMOND W. GOLDSMITH, Washington, D.C.

RECENT DEVELOPMENTS IN UNITED STATES MONETARY POLICY: Joint session with the American Finance Association

Chairman: ALFRED C. NEAL, Federal Reserve Bank of Boston

Papers: Integrating Debt Management and Open Market Operations
ROBERT V. ROSA, Federal Reserve Bank of New York
Direct Control over Bank Portfolios as an Instrument of Monetary Control
LAWRENCE H. SELTZER, Wayne University
An Appraisal of Selective Credit Controls
R. J. SAULNIER, Barnard College

Discussion: HOWARD R. BOWEN, University of Illinois
LESTER V. CHANDLER, Princeton University
PAUL W. MCCRACKEN, University of Michigan

VALUE THEORY

Chairman: EDWARD H. CHAMBERLIN, Harvard University

Papers: A Rehabilitation of Partial Analysis
MELVIN W. REDER, Stanford University
Dynamic Aspects of Oligopoly Price Theory
CARL KAYSEN, Harvard University

Discussion: GARDNER ACKLEY, Office of Price Stabilization
JOE S. BAIN, University of California

5:00 P.M. ANNUAL BUSINESS MEETING

8:30 P.M. BOSTON POPS ORCHESTRA—Arthur Fiedler conducting

Saturday, December 29

9:30 A.M. BUSINESS CYCLE THEORY

Chairman: MOSES ABRAMOVITZ, Stanford University

Papers: Toward a Dynamic Theory of the Cycle
ALVIN H. HANSEN, Harvard University
Wages in the Business Cycle
LLOYD G. REYNOLDS, Yale University

Discussion: ROBERT A. GORDON, University of California
JOSEPH SHISTER, University of Buffalo

INTERNATIONAL TRADE IN THE POSTWAR WORLD

Chairman: JOHN B. CONDLIFFE, University of California

Papers: Methods of Adjustment in International Payments—The Lessons of Postwar Experience
EMILE DESPRES, Williams College
C. P. KINDLEBERGER, Massachusetts Institute of Technology
Regional Organization in the Sphere of Trade and Payments—Western Europe and the Sterling System
J. MARCUS FLEMING, British Cabinet Offices and Visiting Professor, Columbia University

Discussion: Albert O. Hirschman, Federal Reserve Board
Robert Triffin, Yale University

THE ROLE OF WAR IN AMERICAN ECONOMIC DEVELOPMENT: Joint session with the Economic History Association

Chairman: Earl J. Hamilton, University of Chicago

Papers: Wartime Changes in the Money Supply in the United States
Milton Friedman, University of Chicago
The Effects of the Civil War and the Two World Wars on American Transportation
John G. B. Hutchins, Cornell University

Discussion: Milton Heath, University of North Carolina
C. R. Whittlesey, University of Pennsylvania

12:00 M. *Luncheon Meeting of the Executive Committee*

2:30 P.M. GROWTH IN UNDERDEVELOPED COUNTRIES

Chairman: Paul N. Rosenstein-Rodan, International Bank for Reconstruction and Development

Papers: International Trade Theory and Policy from the Standpoint of Underdeveloped Countries
Ragnar Nurkse, Columbia University
The Fiscal and Monetary Implementation of Development Programs
John H. Adler, International Bank for Reconstruction and Development
Some Problems of Growth in Underdeveloped Countries
Arthur I. Bloomfield, Federal Reserve Bank of New York

Discussion: Hans P. Neisser, New School for Social Research
H. W. Singer, United Nations

MONETARY THEORY

Chairman: James W. Angell, Columbia University

Papers: Interest Rates, Liquid Assets, and Spending Decisions
James Tobin, Yale University
Wartime Monetary Events and Monetary Theory
Roland N. McKean, Vanderbilt University

Discussion: Edward S. Shaw, Stanford University
Henry C. Wallich, Yale University

COLLECTIVE BARGAINING IN THE REGULATED INDUSTRIES (Program prepared by C. Emery Troxel, Chairman of Transportation and Public Utilities Section)

Chairman: C. Emery Troxel, Wayne University

Papers: Interdependence of Wage and Price Determination in the Regulated Industries
Eli W. Clemens, University of Maryland
The Regulatory Agency and Industrial Relations: The Airlines Case
Mark Kahn, Wayne University

Discussion: Robert W. Harbeson, University of Illinois
William N. Leonard, Pennsylvania State College

Deaths

Benjamin F. Brooks, April 22, 1951.
William H. Kiekhofer, August 1, 1951.
Charles G. McBride, June 10, 1951.

Appointments and Resignations

Moses Abramovitz, of Stanford University, has been granted a year's leave to work with the National Bureau of Economic Research.

Gardner Ackley has been promoted to professor of economics at the University of Michigan.

George P. Adams, Jr. has been promoted to professor of economics at Cornell University.

John F. Adams has been promoted to associate professor in the School of Business and Public Administration of Temple University.

Walter Adams has been promoted to associate professor of economics at Michigan State College.

Michael Albery has been appointed associate professor of finance and economics at Boston College.

Kenneth J. Arrow, of Stanford University, will be engaged in statistical research in Europe during the current year under a Social Science Research Council fellowship grant.

Paul A. Baran has been promoted to professor of economics at Stanford University.

Nathan Belfer has been appointed assistant research director of the research department of the International Ladies' Garment Workers' Union.

Ralph A. Belfiglio, of the School of Business Administration, University of Pittsburgh, has been called to active duty in the Air Force.

Lester Blum has been promoted from assistant professor to associate professor of economics at Colgate University.

Eva Boenheim has been appointed instructor in economics at Barnard College.

Arthur Borak has returned to the University of Minnesota after a year's leave during which he was engaged in special research in the field of taxation for the military government in Japan.

Howard R. Bowen has been granted two-thirds time leave from the University of Illinois in the current academic year to carry on research projects for the American Economic Association and the National Council of Churches of Christ.

Dorothy S. Brady has resigned as professor of economics at the University of Illinois.

Buford Brandis is on leave from the School of Business Administration, Emory University, to serve as economist with the Machinery and Allied Products Institute in Washington, D.C.

Gerald F. Brannon has been appointed lecturer in statistics in the department of economics of the Graduate School of Georgetown University.

G. A. Briefs, of the Graduate School of Georgetown University, is on leave for special study under a grant from the Alfred P. Sloane Foundation.

Godfrey S. Briefs, of Georgetown University, has been called to active duty in the U. S. Army.

Paul A. Brinker has been promoted from assistant professor to associate professor of economics at the University of Oklahoma.

Ayers Brinser has been appointed visiting lecturer in economics at Harvard University.

Tony Brouwer has been appointed instructor in economics at the University of Michigan.

Douglas S. Brown has accepted an appointment as senior economic and business analyst at the National Bank of Detroit.

Paul L. Brown has been appointed associate professor of marketing at the Ohio State University.

S. L. Brown has resigned as assistant professor of economics at Georgetown University to accept a position in the statistics department of the Chrysler Corporation in Detroit.

Karl Brunner, of the Cowles Commission, University of Chicago, has been appointed assistant professor of economics at the University of California, Los Angeles.

Foy M. Buchanan has resigned as instructor in economics at the University of South Carolina to serve as analyst in the Sales Tax Division of the South Carolina Tax Commission.

Edward C. Budd has resigned from the University of Illinois to accept an instructorship at the University of Oregon.

James W. Bunting has been named director of the Bureau of Business Research, University of Georgia.

R. L. Bunting has been granted a military leave of absence from the University of North Carolina to serve in the Air Force Reserve Officers Training Corps.

David W. Bussell, of the Ohio State University, is on active duty with the United States Navy.

Rita R. Campbell has resigned as assistant professor of economics at Tufts College.

William M. Capron has resigned as assistant professor of economics at the University of Illinois to accept a position with the RAND Corporation.

D. D. Carroll has resumed his duties as professor of economics at the University of North Carolina after a year's leave of absence.

C. C. Carter has been given a military leave of absence from the University of North Carolina to serve in the Air Corps.

Fred E. Case, formerly of the University of Florida, is lecturer in real estate and land economics in the School of Business Administration, University of California at Los Angeles.

Alfred F. Chalk has been promoted from associate professor to professor of economics at the Agricultural and Mechanical College of Texas.

Wingfield Chamberlain has resigned from Hofstra College to take a position with the Defense Minerals Administration of the Department of Interior.

Edward H. Chamberlin has been named David A. Wells Professor of Political Economy at Harvard University.

John S. Chipman has been appointed assistant professor of economics at Harvard University.

Denzel C. Cline has been granted a leave of absence from Michigan State College for research study.

Clay L. Cochran has been promoted from assistant professor to associate professor of economics at the University of Oklahoma.

David S. Craig has been appointed associate professor of business law at the Ohio State University.

W. Arthur Cullman has been appointed assistant professor of marketing at the Ohio State University.

W. O. Cummings has been appointed lecturer in insurance at the University of North Carolina.

William R. Davidson has been appointed assistant professor of marketing at the Ohio State University.

Keith Davis, formerly of the University of Texas, has joined the faculty of the School of Business, Indiana University, as associate professor of management.

Dudley Dillard has been named head of the department of economics, College of Business and Public Administration, University of Maryland.

James H. Dornburg has resigned from the School of Business Administration, Emory University, to accept a position as statistical analyst with the Lockheed Aircraft Corporation, Marietta, Georgia.

Harland Doughty has been promoted to assistant professor of consumption economics at Iowa State College.

Delbert J. Duncan, formerly of the School of Business and Public Administration, Cornell University, has joined the staff of the School of Business Administration, University of California, Berkeley.

Edgar S. Dunn, Jr. has been appointed assistant professor of economics at the University of Flórida.

Robert C. Earnest, formerly of the Graduate School of the Ohio State University, has been appointed assistant professor of economics at Kansas State College.

Edgar O. Edwards has been appointed lecturer in the department of economics and social institutions, Princeton University.

Howard S. Ellis taught in the American Studies Seminar at the Universities of Tokyo and Kyoto last summer.

Paul T. Ellsworth is on leave of absence from the University of Wisconsin to serve as special adviser to the International Bank for Reconstruction and Development.

Paul Fisher has been granted leave of absence from Dartmouth College to serve with the Labor Division of the Economic Cooperation Administration.

J. Marcus Fleming has been reappointed visiting professor in the department of economics of Columbia University for the current academic year.

A. C. Flora, Jr. has been named adjunct professor of economics at the University of South Carolina.

James W. Ford has been appointed instructor in economics at Columbia College.

Peter G. Franck has been appointed visiting associate professor of economics at Haverford College.

William W. Frasure, of the School of Business Administration of the University of Pittsburgh, has entered upon active duty in the U. S. Navy.

Robert Freedman has been reappointed visiting assistant professor of economics at Colgate University for the current academic year.

Walter Garbalinski has resigned from the Illinois Institute of Technology to accept a position with the Bureau of Labor Statistics in Washington, D.C.

Richard K. Gaumnitz has been promoted from associate professor to professor of economics and assistant dean at the University of Minnesota.

Wayne F. Geisert has been appointed associate professor of economics at Manchester College, North Manchester, Indiana.

James M. Gillies, formerly of Indiana University, has been appointed lecturer in real estate and land economics in the School of Business Administration, University of California, Los Angeles.

Leland J. Gordon, of Denison University, is visiting professor of economics at Louisiana State University in the current academic year.

Amor Gosfield has returned to the department of economics of the University of Pennsylvania after having spent two years in Puerto Rico as director of a study of the Puerto Rican economy.

Rush V. Greenslade has joined the staff of the Tennessee Valley Authority as industrial economist in the Division of Regional Studies.

Harold M. Groves, of the University of Wisconsin, served in Bonn, Germany as a consultant to the ECA Mission on Revising the German Tax System in the past summer.

Charles Gulick, of the University of California, Berkeley, is visiting professor at the New York State School of Industrial and Labor Relations this semester.

John G. Gurley has been appointed lecturer in the department of economics and social institutions, Princeton University.

Everett E. Hagen has resigned as professor of economics and chairman of the department of economics at the University of Illinois.

J. A. Haller has been appointed instructor in economics at Georgetown University.

Arnold C. Harberger, of the Johns Hopkins University, has received a Social Science Research Council grant for research on the relationship between relative prices and the structure of international trade.

Delbert C. Hastings, formerly of the University of Minnesota, is now on the staff of the Bureau of Business and Economic Research of the University of Washington.

William W. Haynes has returned to the University of Kentucky after spending a year at the University of Leeds on a Fulbright grant.

A. M. Henderson, formerly of the University of Manchester, is visiting professor of economics at the Carnegie Institute of Technology during the current academic year.

John P. Henderson, formerly of the University of Buffalo, has been appointed acting instructor in economics at Stanford University.

Orris C. Herfindahl has resigned as assistant professor of economics at the University of Illinois to take a position in the Bureau of Mines, Department of the Interior.

F. L. Ho has been reappointed visiting professor of economics at Columbia University for the current academic year.

Daniel M. Holland, formerly of Columbia College, is now engaged in research for the National Bureau of Economic Research.

Robert J. Holloway has been promoted from lecturer to assistant professor of economics at the University of Minnesota.

Charles C. Holt, of the University of Chicago, has been appointed senior research fellow in economics at the Carnegie Institute of Technology.

Schuyler D. Hoslett has been appointed associate professor of administration in the Graduate School of Business, Columbia University.

John A. Howard has been reappointed visiting assistant professor of marketing in the School of Business of the University of Chicago.

Elizabeth E. Hoyt has returned to Iowa State College after a year's leave on a Fulbright lectureship at Mackere College, Uganda, Africa.

Leonid Hurwicz, formerly of the University of Illinois, has been appointed professor of economics and mathematics at the University of Minnesota.

Walter Isard has been appointed lecturer on economics at Harvard University for the current academic year.

Arthur Jansen has been appointed lecturer in finance at the Graduate School of Business, Columbia University, for the current academic year.

Charles E. Johnson, formerly of the University of Minnesota, has joined the faculty of the University of California, Berkeley.

Norman Kaplan has been granted leave from the Illinois Institute of Technology to work with the RAND Corporation.

William T. Kelley has been promoted from instructor to assistant professor of marketing at the University of Pennsylvania.

William C. Kessler, on leave of absence from Colgate University, is serving as visiting professor to American occupation forces in Germany.

Anthony Koo has been promoted to assistant professor of economics at Michigan State College.

Harold D. Koontz, formerly of Trans World Airlines and the Consolidated Vultee Aircraft Corporation, has been appointed professor of transportation and business policy in the School of Business Administration, University of California, Los Angeles.

F. J. Kottke has been granted a leave of absence from the University of North Carolina to serve as economist with the Bureau of Industrial Economics of the Federal Trade Commission.

John K. Langum, formerly vice president and director of research of the Federal Reserve Bank of Chicago, has joined the faculty of the School of Business, Indiana University, as professor of business administration.

Albert Lauterbach is on leave from Sarah Lawrence College to do research work at the Survey Research Center, University of Michigan.

D. J. Leahy has been appointed instructor in economics at Georgetown University.

Richard W. Lindholm has returned to Michigan State College after spending a year on the staff of the Board of Governors of the Federal Reserve System in Washington, D.C.

John M. Lishan has resigned as instructor of economics at Brown University.

Lawrence C. Lockley, of New York University Graduate School of Business Administration, has been appointed dean of the School of Commerce, University of Southern California.

Friedrich A. Lutz, on leave from Princeton University in the current year, is visiting professor at the University of Freiburg in Germany.

Santiago P. Macario, formerly of the University of Texas, has accepted a position with the United Nations Economic Commission for Latin America in Mexico.

Fritz Machlup gave a course of lectures at the Hebrew University, Jerusalem, Israel during the summer.

Carl C. Malone has been granted a leave of absence from Iowa State College to serve as an advisor at the University of Wales.

Alden C. Manchester, formerly of Harvard University and the Bureau of Agricultural Economics, has been appointed executive secretary of the New England Research Council on Marketing and Food Supply with headquarters in Boston.

Philip J. McCarthy has been promoted to the rank of professor in the New York State School of Industrial and Labor Relations.

John McConnell has returned to the New York State School of Industrial and Labor Relations after a year's leave of absence during which he was co-director of a study for the Twentieth Century Fund.

D. M. McGill has been given a military leave from the University of North Carolina to serve in the Air Force Finance Center.

Roland N. McKean, on leave from Vanderbilt University, has joined the staff of the RAND Corporation.

Jean T. McKelvey has been promoted to the rank of professor in the New York State School of Industrial and Labor Relations.

Gordon McKinley has resigned from the Ohio State University to accept a position as chief economist with the Prudential Insurance Company.

Paul McWhorter has been promoted to professor and chairman of the department of marketing, University of Arkansas.

Taulman A. Miller has been promoted from assistant professor to associate professor of economics at Indiana University.

Frederick T. Moore has resigned as assistant professor of economics at the University of Illinois to accept a position in the Bureau of Mines, Department of the Interior.

Theodore Morgan has been granted leave from the University of Wisconsin until September 1952 to serve as economic adviser to the Bank of Ceylon.

J. E. Morton, on leave from the New York State School of Industrial and Labor Relations, is chief of statistical development, Housing and Home Finance Agency, Washington, D.C.

William H. Newman has been designated Samuel Bronfman Professor of Democratic Business Enterprise in the Graduate School of Business, Columbia University.

Archibald J. Nichol has been promoted from assistant professor to associate professor of economics at the University of Pennsylvania.

Robert Osborn, Jr. has been appointed instructor in economics at Princeton University.

Alfred R. Oxenfeldt has resigned as chairman of the department of economics at Hofstra College to accept an appointment as associate professor of economics at City College of New York.

William B. Palmer has been promoted to the rank of associate professor of economics at the University of Michigan.

Andreas G. Papandreou has rejoined the faculty of the University of Minnesota as professor of economics.

Vincent A. Perry has been promoted to the rank of assistant professor in the College of Business Administration of Lehigh University.

Virginia Peterson has been appointed instructor in statistics in the School of Business of the University of Chicago.

Kirk R. Petshek, on leave from Colgate University, is serving as branch chief of the Industrial Relations Analysis Branch of the Department of Labor.

Almarin Phillips has returned to the University of Pennsylvania as instructor in economics.

Richard Phillips has been promoted to the rank of assistant professor of economics at Iowa State College.

Michael A. Plesher has resigned from the School of Business Administration, University of Pittsburgh, to take a position as economist for the CIO.

Karl P. Polanyi has been appointed Schuyler Fiske Seager Fellow in Economics at Columbia University for the academic year 1951-52.

Kenyon E. Poole, of Northwestern University, was a member of the Fiscal Mission to the Bonn Government in the past summer.

Raymond P. Powell, of Princeton University, has been awarded a Social Science Research Council Fellowship to work on the Russian financial system at the Russian Research Center, Harvard University.

Robert L. Raimon has been appointed assistant professor in the New York State School of Industrial Labor Relations.

William F. Rech, formerly of the University of Pennsylvania, has joined the commercial research division of the United States Steel Corporation in Pittsburgh.

Margaret G. Reid has been granted a year's leave of absence from the University of Illinois to accept an appointment at the University of Chicago.

Charles F. Remer is on leave from the University of Michigan in the current semester for research study at Okayama.

Edwin P. Reubens is on leave from Cornell University for special research study.

Jennie Richmond has resigned as instructor in economics at the University of Maine.

Samuel B. Richmond has been appointed assistant professor of business statistics in the Graduate School of Business, Columbia University.

Lawrence S. Ritter has been promoted to assistant professor of economics at Michigan State College.

William E. Rogers has been appointed assistant professor of business management at the University of Oklahoma.

Sidney E. Rolfe, of Princeton University, has accepted a position with the Wage Stabilization Board.

Arnold W. Sametz has been appointed assistant professor of economics at Princeton University.

Edward L. Sard has accepted a position with the National Association of House to House Installment Company, New York City.

Frederick N. Sass, formerly of the University of Pennsylvania, is now economist for the Philadelphia City Planning Commission.

William E. Schenk has been promoted from associate professor to professor of economics at the Agricultural and Mechanical College of Texas.

Frank W. Schiff, formerly of Columbia College, is now economist in the Foreign Research Department of the Federal Reserve Bank of New York.

Jacob Schmookler has been promoted to assistant professor of economics at Michigan State College.

Eli Schwartz has resigned from Brown University to accept a position as staff economist with the Regional Office of Price Stabilization.

Arthur Schweitzer has been promoted from the rank of associate professor to professor of economics at Indiana University.

Harold A. Shapiro, formerly of Trinity University, has accepted a position with the Office of Price Stabilization in Houston, Texas.

Donald L. Shawver has been appointed assistant professor of marketing at the University of Missouri.

Robert P. Shay has been promoted from instructor to assistant professor of economics at the University of Maine.

Geoffrey S. Shepherd, of Iowa State College, was in Japan during the summer at the request of the Japanese government to advise on agricultural price policy problems.

Louis Shere, of Indiana University, was retained by the government of Puerto Rico in the summer months as a consultant on tax problems.

Mary A. Shulman has been appointed instructor in economics at the University of Michigan.

Irving H. Siegel has left Johns Hopkins University to become full-time co-director of a Twentieth Century Fund study.

Leonard Silk is an economist with the Division of Housing Research, Housing and Home Finance Agency, Washington, D.C.

Haig Silvanie has been appointed director of the department of economics, St. Louis University.

J. N. Simler has been appointed instructor in economics at Georgetown University.

Fred Slavick has been appointed instructor in economics at Princeton University.

Caleb A. Smith has been promoted from assistant professor to associate professor of economics at Brown University.

Douglas B. Smith has resigned from the University of Illinois to accept a position in the Economic Development Section of the Department of State.

Tillman M. Sogge, of St. Olaf College, went to Japan again last summer to act as economic consultant to the Economic and Scientific Section of SCAP.

Beryl W. Sprinkel has been appointed assistant professor of economics at the University of Missouri.

R. Clay Sprowls, formerly of the University of Chicago, has been appointed lecturer in business statistics in the School of Business Administration, University of California, Los Angeles.

George A. Steiner has been granted a year's leave of absence from the University of Illinois to accept a position with the Defense Production Administration.

James H. Stewart has resigned from Washington and Lee University to become head of the department of social studies at Eastern Carolina Teachers College.

Robert S. Stockton has resigned from the Ohio State University to enter upon active service in the U. S. Navy.

James Storer is on leave from Bowdoin College to make a study of Philippine trade under a Fulbright fellowship.

John A. Stovel, of the University of Minnesota, is visiting assistant professor of economics at the University of Wisconsin during the current academic year.

Herbert E. Striner, formerly of Syracuse University, is now an economist in the Office of the Chief Economist, Bureau of Mines, Department of Interior.

Robert M. Sullivan has resigned from the School of Business Administration, University of Pittsburgh, to accept a position with the Mellon National Bank.

Theodore A. Sumberg has accepted a one-year assignment as director of the department of research and statistics of the Union Bank of Burma.

Ben B. Sutton has been promoted from lecturer to assistant professor of economics at the University of Minnesota.

Lorie Tarshis has been promoted to the rank of professor in the department of economics at Stanford University.

W. T. Tome has been appointed instructor in economics at Georgetown University.

Alice J. Vandermeulen is on leave from Claremont Men's College for special study under grant by the Social Science Research Council from the Twentieth Century Fund.

Henry C. Wallich, of the Federal Reserve Bank of New York, has accepted an appointment as professor of economics at Yale University.

N. T. Wang has resigned from Columbia College to accept a position with the United Nations in the field of Far Eastern research.

Basil A. Wapensky has resigned from the School of Business Administration, Emory University, to accept a position in the research department of the Federal Reserve Bank of Atlanta.

Harold L. Wattel is now in charge of the economics department of Hofstra College.

Sidney Weintraub has been appointed professor of economics at the University of Pennsylvania.

Jacob Weissman has been appointed instructor in economics in Columbia College for the current academic year.

Thomas L. Whisler has been appointed assistant professor of business management at the University of Missouri.

Thomson M. Whitin has been appointed instructor in economics at Princeton University.

John P. Windmuller has been appointed assistant professor in the New York State School of Industrial and Labor Relations to work with a group of German students who are studying at the School this year.

John B. Woosley has been made Kenan professor of finance at the University of North Carolina.

Herbert K. Zassenhaus, of Colgate University, has accepted a post with the International Monetary Fund.

Leonard Zobler is lecturer in economic geography in the Graduate School of Business, Columbia University.

FORTY-EIGHTH LIST OF DOCTORAL DISSERTATIONS IN POLITICAL ECONOMY IN PROGRESS IN AMERICAN UNIVERSITIES AND COLLEGES

The first list of this kind was dated January 1, 1904, and was sent to all members, but not regularly bound in the publications. A notation as to the earlier lists, extending from 1905 to 1927, may be found in the *Review* for September, 1927, page 574. Annual lists thereafter are to be found in the September number of the *Review* for each year.

The present list specifies doctoral degrees conferred, doctoral dissertations completed and accepted by the various universities, and the theses still in preparation. The last date given is the probable date of completion.

The list represents the status of the several theses on June 15, 1951, except for a few items later reported as completed.

Economic Theory; General Economics

Degrees Conferred

LAWRENCE ABBOTT, Ph.D., Columbia, 1951. The theory of quality competition.

ROBERT W. ADAMS, Ph.D., Massachusetts Institute of Technology, 1951. Use of economic models in forecasting.

KENNETH J. ARROW, Ph.D., Columbia, 1951. Measurement of economic stability.

EDWARD A. CARLIN, Ph.D., New York, 1950. The relationships between the major economic philosophies since Adam Smith and those expressed by the Supreme Court, through opinions rendered in cases affecting the governmental control of business corporations from 1930 to 1940.

JOHN S. CHIPMAN, Ph.D., Johns Hopkins, 1951. The theory of intersectoral money flows and income formation.

HAROLD S. DIAMOND, Ph.D., Columbia, 1951. Studies in innovation theory.

MONA E. DINGLE, Ph.D., California, 1951. The structure of interest rates: a study of market influences.

LEO E. DOBRIANSKY, Ph.D., New York, 1951. The social philosophical system of Thorstein Veblen.

CORNELIUS A. ELLER, S.J., Ph.D., St. Louis, 1951. A synthesis of the economic doctrines of John Atkinson Hobson.

SHERMAN E. GUNDERSON, Ph.D., Iowa, 1950. An appraisal of the economic theory and policy recommendations of John R. Commons.

INGRID E. HAHNE, Ph.D., Pennsylvania, 1951. Price discrimination and economic welfare with special reference to public utilities.

DAVID B. HAMILTON, Ph.D., Texas, 1951. Newtonian classicism and Darwinian institutionalism: a study of change in economic theory.

E. E. LIEBHAFSKY, Ph.D., Illinois, 1951. National science policy and technological program.

MICHAEL MCPHELIN, Ph.D., Harvard, 1951. Meaning and requirements of economic order.

MORRIS MENDELSON, Ph.D., Cornell, 1950. Some aspects of consumer behavior.

EDWARD J. MISHAN, Ph.D., Chicago, 1951. The effects of price-stabilizing speculation on equilibrium analysis.

ROBERT L. ROUSE, Ph.D., Iowa, 1950. A reappraisal of the stagnation thesis.

JOHN SAGAN, JR., Ph.D., Illinois, 1951. A study of the development of monetary theory of English economists in the classical tradition, 1776-1848.

JACOB SCHMOOKLER, Ph.D., Pennsylvania, 1951. The relation of invention to economic development.

JEROME F. SCHWIER, Ph.D., St. Louis, 1951. The production function, Euler's theorem, and the theory of distribution.

PAUL SULTAN, Ph.D., Cornell, 1950. Wage and employment relationships.

TU TU, Ph.D., Illinois, 1950. The pricing system in a planned economy.

BERNARD W. WAYNE, Ph.D., Chicago, 1950. The neo-historismus of Werner Sombart.

Theses Completed and Accepted

JOSEPH CROPSEY, B.A., Columbia, 1939; M.A., 1940. Polity and economy: an interpretation of the principles of Adam Smith. *Columbia.*

PATRICK W. GEARTY, B.A., St. Paul Seminary, 1941; M.A., Catholic, 1947. Economic and social philosophy of Monsignor John A. Ryan. *Catholic.*

Theses in Preparation

CARLISLE W. BASKIN, B.S., South Carolina, 1942; M.A., Virginia, 1947. A review and application of certain theories of the spacing of cities or central places. 1952. *Virginia.*

JOE E. BROWN, B.S., Texas College of Arts and Industries, 1939; M.S., 1941. Population theory and the value problem: an institutional economic analysis. 1952. *Texas.*

IRA C. CASTLES, B.S., Louisiana State, 1934; M.A., Columbia, 1947. A study of economic ideas in North Carolina, 1760-1860. 1952. *North Carolina.*

JERE W. CLARK, B.B.A., Georgia, 1946; M.S., 1948. Inter-community commodity flows within the United States. 1953. *Virginia.*

JOSEPH W. CONRAD, B.A., Grinnell, 1935; M.A., California, 1943. Property income and the theory of functional distribution. 1952. *California.*

GEORGE F. DIMMLER, B.A., California, 1936; M.A., Columbia, 1941. The transaction as a unit of economic analysis. 1952. *Columbia.*

RICHARD A. EASTERLIN, M.E., Stevens Institute of Technology, 1945; M.A., Pennsylvania, 1949. Critical review of the theory and measurement of economic growth. 1953. *Pennsylvania.*

A. C. FLORA, JR., B.A., South Carolina, 1943; M.A., 1949. Economic thought in South Carolina, 1815-1860. 1952. *North Carolina.*

ARTHUR M. FREEDMAN, M.A., Cincinnati, 1939. Current issues in the theory of interest. *Pennsylvania.*

FRANCIS C. GENOVESE, B.A., Toronto, 1942; M.A., 1946. A going concern theory of profits. 1952. *Wisconsin.*

A. S. HALL, B.S., Illinois, 1947; M.S., 1949. The development of general equilibrium theory by the Lausanne School. 1951. *Illinois.*

DANIEL HAMBERG, B.S., Pennsylvania, 1945; M.A., 1947. Analysis of the theory of the equilibrium rate of growth. 1953. *Pennsylvania.*

EDWIN W. HANCZARYK, B.A., Brown, 1941; M.A., 1947. The role of the interest rate in welfare economics. 1951. *Northwestern.*

CHARLES N. HENNING, B.A., California (Los Angeles); M.A., 1940. Social value and monetary theory. 1952. *California* (Los Angeles).

ABRAHAM HIRSCH, B.B.A., College of the City of New York, 1943; M.A., Columbia, 1947. Wesley Mitchell and economic science. 1952. *Columbia.*

WILLIAM H. HOHMANN, S.J., B.A., Boston College, 1937; M.A., 1938; St.L., Weston College, 1944. Economic content of considerations in support of contributive justice from Albertus Magnus to Victoria. 1952. *St. Louis.*

FRANCIS T. JUSTER, B.S.Ed., Rutgers, 1949. The development of multiplier theory. 1952. *Columbia.*

GLENN A. LEHMANN, B.A., Ohio Wesleyan, 1948; M.A., Harvard, 1950. Economic growth, with especial reference to the role of capital formation. 1952. *Harvard.*

CARL H. MADDEN, B.A., Virginia, 1942; M.A., 1950. Divergencies in growth rates among the different parts of an economic system. 1952. *Virginia.*

HARRY MARKOWITZ, M.A., Chicago, 1950. Theories of uncertainty and investment company behaviour. 1951. *Chicago.*

LEONARD W. MARTIN, B.S., St. John's (Brooklyn), 1939; M.A., 1941. Mobility of capital. 1953. *Columbia.*

THOMAS MAYER, B.A., Queens, 1949; M.A., Columbia, 1949. The stagnation thesis—a reanalysis. 1952. *Columbia.*

FREDERICK W. MORRISSEY, B.A., Santa Barbara College, 1940. Economic theories of the Fabians. 1952. *California.*

DEAN W. MORSE, B.A., Harvard, 1941. Theories of economic development. 1952. *Columbia.*

LAWRENCE NABERS, B.A., Arizona, 1942. The anti-neo-classical tradition in English political economy from Mill to Marshall. 1952. *California.*

WALTER C. NEALE, B.A., Princeton, 1947; M.A., Columbia, 1948. The institutional requirements and institutional effects of industrialization: the theoretical implications of the work of Veblen, Schumpeter, Polanyi, and Tawney. 1953. *Columbia.*

WALTER G. O'DONNELL, LL.B., Cleveland, 1930; B.A., Western Reserve, 1932; M.A., 1943. An institutional theory of value. 1952. *Columbia.*

RALPH W. PFOUTS, B.A., Kansas, 1942; M.A., 1947. The place of consumer's surplus in welfare economics. 1952. *North Carolina.*

RENO C. PRETTI, B.S., St. Benedict's College, 1941; M.A., Georgetown, 1949. Dynamic wage theory. 1951. *Georgetown.*

STANLEY REITER, B.A., Queens (New York), 1947; M.A., Chicago, 1950. Production, returns to scale, and the internal structure of the firm. 1951. *Chicago.*

SIDNEY SCHOEFFLER, B.S., New York, 1945; M.A., Pennsylvania, 1946. The theory of prediction of economic phenomena. *New School for Social Research.*

MITCHELL M. SMILAND, B.S., Minnesota, 1946. The economics of N.-F. Canard. 1952. *California.*

BENJAMIN SOLOMON, M.A., Chicago, 1950. Large corporations and the theory of investment decisions. 1952. *Chicago.*

JACOB A. STOCKFISCH, B.A., Pomona, 1947. Tax capitalization and related issues in capital theory. 1952. *California.*

PERRY D. TEITELBAUM, B.S., College of the City of New York, 1946; M.A., Columbia, 1948; M.A., Chicago, 1951. A reconsideration of the acceleration principle. 1952. *Chicago.*

ELIZABETH B. TOLMAN, B.A., Smith, 1941; M.A., Maine, 1942. Malthus and early English theories of economic crises. 1953. *Wisconsin.*

FRANCES A. TOYER, B.S., Bluefield State College, 1938; M.A. Atlanta, 1942. The economics of John Bates Clark. 1952. *New York.*

GEORGE M. UMEMURA, B.A., Ohio Wesleyan, 1946; M.B.A., Indiana, 1948. The marketing concepts of the classical school. 1952. *Indiana.*

MALCOLM C. URQUHART, B.A., Alberta, 1940. Capital accumulation, technological change, and economic progress: a study of economic change with special reference to the functional distribution of income. 1952. *Chicago.*

FRANK VAN BRUNT, M.A., Chicago, 1948. Certain community experiments in alternative systems of distribution. 1951. *Chicago.*

JOHN J. WAELTERMANN, B.A., St. Louis, 1946; M.A., 1948. Statements of Pius XII on economic doctrine in relation to statements of Pius XI. 1952. *St. Louis.*

WALTER C. WAGNER, B.S., North Carolina, 1941; M.A. Arkansas, 1947. Economic equilibrium as an exemplification of social reciprocity. 1952. *Texas.*

DONALD A. WATSON, M.A., Iowa, 1948. The theory of optimum distribution of personal income. 1951. *Iowa.*

JACOB I. WEISSMAN, B.A., Michigan, 1935; J.D., 1936. Studies in the relationship between law and economics. 1952. *California.*

WILLIAM V. WILMOT, JR., B.A., Syracuse, 1937; M.A., 1939. Some theoretical considerations of the restrictive practices of cartels. 1951. *Wisconsin.*

DONALD T. WOOD, B.A., Harvard, 1937; M.A., Columbia, 1947. A critical reexamination of Henry George's principles of site rent taxation. 1953. *Columbia.*

IBSON WU, B.S., Chiao-Tung, 1941; M.A., Washington, 1948. Micro-analysis of the theory of employment and value. 1953. *Columbia.*

Economic History; National Economies

Degrees Conferred

LEON AGRANAT, Ph.D., New School for Social Research, 1951. Price control in Germany.

HUGH G. J. AITKEN, Ph.D., Harvard, 1951. W. H. Merritt and the Welland Canal Co., a study in entrepreneurial approach to economic history.

LELAND ALLBAUGH, Ph.D., Harvard, 1951. The economy of Crete and the means to improvement.
ALBERT Y. BADRE, Ph.D., Iowa, 1950. The economic development of Lebanon with special emphasis on finance.
GORDON DONALD, JR., Ph.D., Chicago, 1951. The depression in cotton textiles, 1923-49.
DOROTHY GREGG, Ph.D., Columbia, 1951. The exploitation of the steamboat: the case of Colonel John Stevens.
WILLIAM HALLER, JR., Ph.D., Columbia, 1951. The Puritan frontier: town-planning in New England colonial development, 1630-1660.
RALPH E. HOLBEN, Ph.D., Columbia, 1951. Swedish economic policy and economic stability.
FRANCES C. HUTNER, Ph.D., Columbia, 1950. The Farr Alpaca Co.: a case study in business history.
SIMEON HUTNER, Ph.D., Princeton, 1951. Economic maximization in time of war, an historical survey.
SARA A. PAYNE, Ph.D., New York, 1950. The contribution of southern political economists to the development of states' rights philosophy from the economic crisis of 1828 to that of 1860.
WILBERT H. RUENHECK, Ph.D., New York, 1951. Business history of the Robert Gair Company, 1864 to 1927.
HENRY F. SCHOENBECK, Ph.D., Nebraska, 1951. The economic views of James K. Polk as expressed in the course of his political career.
THEODORE A. SUMBERG, Ph.D., New School for Social Research, 1950. The process of industrial development.
BERNARD F. TRIMPE, D.C.S., Indiana, 1950. History of Stokely-Van Camp Company—1898-1950.

Theses Completed and Accepted

HAROLD SELIGMAN, B.A., Harvard, 1940; M.P.A., 1945; M.A., George Washington, 1945. Economic recovery in Western Germany. *Harvard.*

Theses in Preparation

EDWARD ALBERTAL, M.B.A., Minnesota, 1946. The economics of accelerated industrialization—a case study: Argentina, 1945-1950. 1953. *Minnesota.*
ROBERT K. ARNOLD, B.A., California, 1947. Economic history of the Philippine Islands, 1898-1946. 1952. *California.*
ROSEMARY M. ARNOLD, B.A., Hunter, 1938. Markets and pricing in native economies of West Africa: an institutional analysis. 1952. *Columbia.*
LEONARD J. ARRINGTON, B.A., Idaho, 1939. Mormon economic policies 1847-1907: a study of the role of the church in the development of a region. 1952. *North Carolina.*
HENRY G. AUBREY, Dr. rer. pol., University of Vienna, 1924. Mexican industrialization. *New School for Social Research.*
MAURICIO BAEZ, G.Agr., V. Central de Venezuela, 1942. Agricultural development in Venezuela under changing economic conditions. 1952. *Wisconsin.*
FRANCIS M. BATOR, B.S., Massachusetts Institute of Technology, 1949. Economics of decontrol: the German experiment of 1948. 1952. *Massachusetts Institute of Technology.*
DAVID M. BEHEN, Ph.B., Chicago, 1932. The labor movement in Chicago, 1877-1896. 1952. *Chicago.*
ROMAN BERNAUT, B.A., Columbia, 1947; M.A., 1949. The grain problem in the Soviet Union, 1926-30. 1952. *Columbia.*
GEORGE BLACKWOOD, B.A., Chicago, 1942; M.A., 1947. United Automobile Workers of America, 1937-1948. 1952. *Chicago.*
NATHAN BLOOM, B.S.S., College of the City of New York, 1942; M.A., Columbia, 1948. The nature of innovation in America, 1790-1860. 1952. *Columbia.*
DAVID D. BURKS, B.A. Carleton College, 1945. The dawn of manufacturing in Mexico. 1951. *Chicago.*
JANET G. CHAPMAN, B.A., Swarthmore, 1943; M.A., Columbia, 1950. Real wages in the Soviet Union, 1928-48. 1952. *Columbia.*

Tirtha P. S. Chawdhari, B.Sc., Nagpur University, 1935. A plan for agricultural economic developments in Bihar. 1951. *Wisconsin.*

John W. Chisholm, B.A., Baylor, 1936; M.A., Louisiana State, 1938. The economics of the salt industry in Louisiana. 1951. *Louisiana State.*

An-Min Chung, M.B.A., Pennsylvania, 1949. Industrial development in China: history, problems, prospects. 1953. *Pennsylvania.*

Stanley H. Cohn, B.A., Reed, 1947; M.A., Chicago, 1949. The role of the fiscal system in the Soviet economy. 1951. *Chicago.*

George Coutsoumaris, Graduate, Supreme School of Economic and Commercial Sciences, Athens, Greece, 1934. Possibilities of increasing economic efficiency in Greek agriculture. 1952. *Chicago.*

H. Jerome Cranmer, B.A., Drew, 1947; M.A., Columbia, 1949. The role of government in economic development: internal improvements in New Jersey. 1952. *Columbia.*

Alan D. Dailey, B.S., Kansas State, 1924. M.A., Indiana, 1947. A re-examination of U.S. economic history, 1865-1896, in the light of recent developments in monetary theory. 1951. *Illinois.*

Robert A. Degen, B.S., Syracuse, 1947; M.A., 1949. Some major factors in the development of the Canadian economy, 1900-1950. 1952. *Wisconsin.*

Herbert W. Dowd, Ph.B., Muhlenberg, 1943; M.A., Fletcher School, 1947. The native land and labor policies of the South African administration of South West Africa. 1951. *Fletcher School of Law and Diplomacy.*

Francis Duncan, B.A., Ohio Wesleyan, 1943; M.A., Chicago, 1947. History of the Goodrich Lake Transportation Company. 1952. *Chicago.*

Donald Eldon, B.A., Western Ontario, 1948; M.A., Harvard, 1951. American influence in the Canadian iron and steel industry. 1951. *Harvard.*

Marianne A. Ferber, B.A., McMaster, 1944; M.A., Chicago, 1946. The financial policy of Czechoslovakia after the first world war. 1952. *Chicago.*

John W. Frederickson, B.S., Northwestern, 1938; M.A., Chicago, 1942. American shipping and foreign commerce, 1789-1860. 1952. *Chicago.*

Harry Frumerman, B.S., College of the City of New York, 1933; M.A., Columbia, 1934. Jay Gould—a study of entrepreneurship. 1952. *Columbia.*

Stephen V. Fulkerson, B.A., California (Los Angeles), 1941; M.A., Chicago, 1947. Influence of the gentry as a class upon the society of restoration England. 1952. *Chicago.*

Edmour Germain, Ph.B., Vermont, 1931; M.A., Columbia, 1948. The eastward migration of the Russians. *New School for Social Research.*

Morris D. Glickfeld, B.A., California, 1941. The sources of American industrial entrepreneurship, 1800-1865. 1952. *California.*

Joseph Goldman, B.A., Brooklyn, 1947; M.A., Columbia, 1950. Economic and social factors in the history of the southern iron and steel industry, 1850-1914. 1953. *Columbia.*

Carter H. Golembe, B.A., Columbia, 1946; M.A., 1947. State banks and economic development of the West, 1830-1945. 1952. *Columbia.*

Sanford Gordon, B.S., New York, 1947; M.A., 1948. Public opinion as a factor in the emergence of a national antitrust program, 1873-1890. *New York.*

Morris Hamburg, B.A., Pennsylvania, 1943; M.A., 1948. Income elasticity of demand for food. 1952. *Pennsylvania.*

John P. Hardt, B.A., Washington, 1945; M.A., 1948. Trends of Soviet industrial structure, 1928-1950. 1952. *Columbia.*

Homer C. Harlan, B.A., Knox, 1940; M.A., Chicago, 1948. Charles Tyson Yerkes and the Chicago Transportation System. 1952. *Chicago.*

James R. Hoath, B.S., Kansas State, 1941; M.A., 1949. Consumer interests in the New Deal agricultural programs and policies of the United States. 1952. *Nebraska.*

Edwin Holm, B.S., Virginia, 1939; M.A., 1941. The equilibrium rate of economic growth for the United States, 1870-1950. 1952. *Chicago.*

James Ingram, B.S., Alabama, 1942; M.A., Stanford, 1947. Economic change in Thailand. 1952. *Cornell.*

Albert Kessler, B.S., College of the City of New York, 1946; M.A., Wisconsin, 1948. The Israeli economic budget and planned development. 1952. *Wisconsin.*

BERNARD KROEGER, B.E., Chicago Teachers College, 1942; M.A., Northwestern, 1950. Ninian Edwards Illinois history, 1809-1833. 1952. *Northwestern.*

ROBERT G. LAYER, B.A., Ohio Wesleyan, 1943; M.A., Harvard, 1948. Wages and labor productivity in four cotton textile mills in New England, 1825-1860. 1951. *Harvard.*

HAROLD LUBELL, B.A., Bard, 1944; M.P.A., Harvard, 1947; M.A., 1949. French investment program. 1952. *Harvard.*

ANDREA MARCHI, B.S.Sc., College of the City of New York, 1947; M.A., Columbia, 1948. Economic development in the southern regions of Italy. *New School for Social Research.*

VIRGINIA W. B. MILLER, B.A., Texas, 1941; M.A., 1942. Agricultural depression in the United States during the last quarter of the 19th century. 1952. *Columbia.*

NATHAN MORESH, B.S., New York, 1934; M.A., 1935. Commercial activity on the Jersey side of the lower Hudson in the 17th and 18th centuries. 1952. *New York.*

BOYD L. NELSON, B.A., Wisconsin, 1947; M.A., 1948. The laissez-faire theory as an influence in American economic history. 1952. *Wisconsin.*

JOHN NETER, B.S., Buffalo, 1943; M.B.A., Pennsylvania, 1947. A study of the United States post-war economics after World Wars I and II. 1953. *Columbia.*

HOWARD W. NICHOLSON, B.A., Oberlin, 1942; M.A., Harvard, 1948. The history of modern highway development in the Middle Atlantic states. 1952. *Harvard.*

CARL A. NORDSTROM, B.A., Antioch, 1946; M.A., Columbia, 1949. The rate of economic development in Switzerland. 1953. *Columbia.*

BERNARD OLSEN, M.A., Chicago, 1950. The role of foreign capital in the early development of Indiana, 1816-1860. 1952. *Chicago.*

ROBERT H. PERSONS, JR., B.A., Texas, 1946. Land use in the south plains of Texas, 1890-1950. 1953. *Columbia.*

WALLACE C. PETERSON, B.A., Nebraska, 1947; M.A., 1948. The reconstruction of the French economy. 1953. *Nebraska.*

JOHN M. PFAU, B.A., Chicago, 1947; M.A., 1948. American investments in Western Europe, 1918-1940. 1952. *Chicago.*

JOHN E. PIXTON, JR., B.S., Swarthmore, 1946; M.A., Connecticut, 1949. The early career of Charles G. Dawes. 1952. *Chicago.*

SAMUEL H. POPPER, B.A., Brooklyn, 1947; M.A., New York, 1948. The social and economic history of Newark, 1870-1910. 1952. *New York.*

ROBERT G. PRODRICK, B.A., Toronto, 1938; M.A., 1950. The emergence of public enterprise in the Canadian economy. 1953. *Columbia.*

GHANDKOTA V. SUBBA RAO, B.A., Madras, 1947; M.A., 1949. Some aspects of capital formation in under-developed areas, with special reference to India. 1952. *Columbia.*

ALAN D. REDDING, B.A., California (Los Angeles), 1948; M.A., Columbia, 1950. Productivity in Soviet agriculture, a comparative study. 1952. *Columbia.*

DANIEL J. REED, B.S., St. Louis, 1947; M.A., 1948. The reinterpretation of British history by British socialist historians. 1952. *Chicago.*

JACK J. ROTH, B.A., Chicago, 1946. The Sorelian conception of revolution. 1952. *Chicago.*

NAFI SAYEM-ADDAHR, B.A., American University of Beirut, 1948; M.A., Johns Hopkins, 1949. Conditions of economic development in Syria. 1952. *Columbia.*

SAUL SCHNEIDER, B.S., Long Island, 1943; M.A., New York, 1948. Findings of doctoral dissertations in the area of American economic history to 1789 as reflected in the literature of that field. *New York.*

HARVEY H. SEGAL, B.A., North Carolina, 1943. Internal improvements activity and business cycles, 1834-1861. 1952. *Columbia.*

HSU IH SEN, M.A., Iowa, 1949. A study of industrial production planning for China. 1952. *Iowa.*

EDITH G. SEVERO, B.A., Hunter, 1941; M.A., Wisconsin, 1943. History of the U.S. Department of the Treasury, 1789-1836. 1952. *Columbia.*

MILTON W. SHAPIRO, B.A., Brooklyn, 1943. Turkey, the transition to industrialization: a case study in deliberate industrialization from domestic resources. *New School for Social Research.*

A. SHUCHMAN, M.Sc., Pennsylvania, 1941. Economics of co-determination in West Germany. 1953. *Pennsylvania.*

RICHARD B. SIMONS, B.A., Miami, 1941. The controversy over the nationalization of the British coal industry, 1919-1946. 1952. *Chicago.*

ALFRED G. SMITH, JR., B.A., Columbia, 1934; M.A., 1939. Economic readjustment of an old cotton state, South Carolina, 1820-1860. 1952. *Columbia.*

ARTHUR J. R. SMITH, M.A., Harvard, 1949. The changing structure of public and private debt in the U.S., 1914-1948. 1950. *Harvard.*

GILBERT N. SMITH, B.A., Oklahoma City, 1936; M.B.A., Boston, 1938. Changing attitude of government toward competition and monopoly, 1911-1933. 1952. *Nebraska.*

JOHN S. SPRATT, B.A., Texas, 1928; M.A., 1928. Roots of economic unrest in Texas, 1885-1900. *Texas.*

GEORGE S. SPRINGSTEEN, JR., B.A., Dartmouth, 1943; M.A. Fletcher School, 1947; M.A.L.D., 1949. The British navigation laws: the influence of foreign nations upon their modification and repeal, 1783-1849; a study in commercial policy. 1952. *Fletcher School of Law and Diplomacy.*

DONALD E. STOUT, B.A., Colorado, 1949; M.A., 1949. Some aspects of innovations in retailing. 1952. *Harvard.*

ESTHER TAUBER, B.A., Missouri, 1932; M.S.Sc., New School for Social Research. Cooperative development in Palestine. *New School for Social Research.*

HASAN S. A. THAMER, B.S., California, 1941. Agricultural policy of Iraq. *California.*

RONALD B. THOMPSON, B.A., Yale, 1935. Soviet managerial policy, 1928-1939. 1952. *Chicago.*

RALPH N. TRAXLER, JR., B.A., Mercer, 1947; M.A., Colorado, 1947. The Texas and Pacific railroad land grant. 1952. *Chicago.*

EDGAR L. TURGEON, B.A., California, 1942; M.A., 1948. The pricing of producers' goods in the USSR. 1952. *Columbia.*

LESTER VANDEBERG, B.A., Morningside, 1941. American investments in Honduras. 1952. *Chicago.*

JOSE VERGARA, Graduate Agricultural Engineer, Special School of Agricultural Engineers, Madrid, Spain, 1930. Land reform and productivity in southern Spain: a problem of Mediterranean agriculture. 1951. *Chicago.*

MORTON WOLF, B.S., Pennsylvania, 1929; M.A., 1932. Capital formation under the English labor government. 1952. *Pennsylvania.*

CHARLES A. YAGER, M.A., Michigan, 1947. A study of the economic development of India. 1952. *Michigan.*

PHILIP W. YOUNG, B.A., Hamline, 1940; M.A., Chicago, 1947. The history of the good roads movement in Illinois, 1900-1920. 1952. *Chicago.*

EMILIO ZEA-GONZALEZ, B.A., San Carlos, Guatemala, 1941; M.S.S., New School for Social Research, 1949. The problem of industrialization in the Republic of Guatemala. *New School for Social Research.*

Statistics and Econometrics

Degrees Conferred

JEAN A. BRONFENBRENNER, Ph.D., Chicago, 1950. Asymptotic bias in least squares estimates of the parameters of a single linear stochastic equation in a complete system.

CARL F. CHRIST, PH.D., Chicago, 1950. A test of an econometric model for the United States, 1921-47.

LOUIS B. KAHN, Ph.D., Wisconsin, 1951. A study of productivity and its measurement.

MARSHALL E. MILLIGAN, Ph.D., Iowa, 1951. Some suggested applications of the theory of probability in the determination of sample for business and economic research.

FRED W. NORWOOD, Ph.D., Texas, 1951. Statistical study of secular trend in cyclical fluctuations in Texas business in relation to United States.

IRVING H. SIEGEL, Ph.D., Columbia, 1951. Concepts and measurements of production and productivity.

ROBERT SOLOW, Ph.D., Harvard, 1951. On the dynamics of the income distribution.

GEORGE SUZUKI, Ph.D., Minnesota, 1951. Estimation of demand for automotive replacement parts.

SALEH I. TOULAN, Texas, 1951. An index of industrial production of Egypt.

Theses in Preparation

GEORGE H. BORTS, B.A., Columbia, 1947; M.A., Chicago, 1949. Production relations in the railroad industry, 1951. *Chicago.*

GEORGE K. BRINEGAR, B.Ed., Illinois State Normal University, 1940; M.A., Chicago, 1949. Short-run effects of income changes upon household expenditures—a study of a one-industry city, Danielson, Connecticut. 1951. *Chicago.*

ROSSON L. CARDWELL, B.A., Chicago, 1940; M.A., 1949. Economic efficiency and hospital care. 1951. *Chicago.*

DONALD M. FORT, B.A., Grinnell, 1938; M.A., Illinois, 1940; M.A., 1944. Costs and decisions in pork processing: a case study. 1952. *Chicago.*

OSCAR R. GOODMAN, B.B.A., Northwestern, 1943; M.S., Wisconsin, 1947. The economics of sales forecasting. 1951. *Wisconsin.*

WILLIAM HAMBURGER, B.A., Chicago, 1948; M.A., 1950. The consumption function. 1951. *Chicago.*

JOHN O. E. HARDIN, B.A., Handelshogskolan in Göteborg, Göteborg, Sweden, 1945; M.A., Minnesota, 1947. Concepts and measurement of productivity. 1952. *Minnesota.*

DELBERT C. HASTINGS, B.S., Minnesota, 1947; M.A., 1949. Application of area sampling in market research. 1953. *Minnesota.*

CHARLES M. JAMES, B.S., Pennsylvania, 1932. Measuring productivity in an extractive industry. 1952. *Pennsylvania.*

JOHN M. MATTILA, B.B.A., Minnesota, 1931; M.B.A., Wisconsin, 1947. A statistical analysis of the consumption function. 1952. *Wisconsin.*

MORTON ZEMAN, B.A., Chicago, 1943; M.A., 1948. The effect of risk and uncertainty on the corporate demand for funds. 1952. *Chicago.*

Economic Systems; Planning and Reform; Cooperation

Degrees Conferred

RENZO D. BIANCHI, Ph.D., Chicago, 1950. Liberalism and its critics, with special attention to the economic doctrines of the Roman Catholic Church.

YA-LUN CHOU, Ph.D., Pennsylvania, 1951. The Chinese agrarian problem and the Communist reform.

BARNETT S. EBY, Ph.D., Princeton, 1951. Economics and the concept of justice.

DAVID GRANICK, Ph.D., Columbia, 1951. Plant management in the Soviet industrial system.

JOSEPH P. KAZICKAS, Ph.D., Yale, 1951. The sovietization of the Czechoslovakian economy.

IRA A. KIPNIS, Ph.D., Chicago, 1950. The American socialist party, 1897-1912.

LAURENCE E. LEAMER, Ph.D., Chicago, 1950. Economics and democratic social action: a study of the role of economics in the education of citizens for a free society.

CHI PEI TSENG, Ph.D., Iowa, 1950. England as a case study in planning and freedom, 1945-1950.

HENRY H. WARE, Ph.D., Columbia, 1950. Economics of Soviet retail trade.

Theses in Preparation

JOSEPH S. BERLINER, B.A., Harvard, 1947; M.A., 1949. The Soviet firm. *Harvard.*

EVA BOENHEIM, B.A., Michigan, 1945; M.A., Columbia, 1948. The problem of planning investment in socialist Britain. 1953. *Columbia.*

WALTER S. BUCKINGHAM, JR., B.S., Georgia Tech., 1948; M.S., 1949; M.A., Indiana, 1950. British nationalization and the concept of a socialized industry. 1951. *Indiana.*

DOUGLAS F. DOWD, B.A., California, 1941. The theory of a corporative order. 1951. *California.*

RONALD H. ELPERIN, B.A., Wisconsin, 1939; M.A., 1950. Some English socialist forerunners of Marx: Gray, Bray, Hodgskin, Thompson. 1952. *Wisconsin.*

Alexander Erlich, Friedrich Wilhelm University, Berlin, 1930-1933; Free Polish University, Warsaw, 1934-1938. Problem of pricing in the Soviet economy. *New School for Social Research.*

Marvin Frankel, B.A., California, 1947. Labor plans for the administration of the private sector of British industry. 1952. *California.*

Nan L. Grindle, B.A., Connecticut College, 1944; M.A. Fletcher School, 1946. The economics of socialism. 1952. *Fletcher School of Law and Diplomacy.*

Lu-Seng Li, B.A., Cambridge University, England, 1947. Chinese Communists' economic policy for the first stage of China's transformation—the stage of new democracy. 1952. *Chicago.*

Arthur T. Y. Loh, B.A., St. John's University, Shanghai, 1945; M.A., Illinois, 1949. The theory of economic development and planning in an undeveloped country, as applicable to China. 1951. *Illinois.*

Jackson Mayers, B.A., Southern California, 1950; M.A., 1951. The theory of state monopoly and nationalization: 1952. *Southern California.*

Jack Minkoff, B.A., Cornell, 1948; M.A., Columbia, 1950. State planning committee (Gosplan) of the Union of Soviet Socialist Republics. 1953. *Columbia.*

William W. Moore, B.A., Columbia, 1935; M.I.A., 1948. Soviet social security system. 1953. *Columbia.*

Murray E. Polakoff, B.A., New York, 1946; M.A., Columbia, 1949. Theories on economic planning and freedom. 1953. *Columbia.*

Nicholas W. Rodin, B.Com., British Columbia, 1947; M.A., 1947; M.A., Columbia, 1950. Soviet price policies and administration. 1953. *Columbia.*

Sidney E. Rolfe, B.A., Chicago, 1943. Allocation of manpower under planning: the British case. 1951. *Chicago.*

George G. Sause, Jr., B.A., Moravian, 1941. Land development-value problems and the British Town and Country Planning Act. 1952. *Columbia.*

Bernard Schurman, B.S.S., College of the City of New York, 1939; M.A., Columbia, 1947. Economic planning in a liberal-capitalist society: a study of the National Resources Planning Board, 1933-1943. 1952. *Columbia.*

Arthur O. Seltzer, B.A., Chicago, 1938; M.A., 1941. The English Town and Country Planning Act, 1947; a study in the economics of planning resource allocation. 1952. *Chicago.*

Charles E. Silberman, B.A., Columbia, 1946. New Deal policies in the U.S.A., 1952. *Columbia.*

Valery J. Tereshtenko, Engineer, Institute of Agricultural (Czechoslovakia) Cooperation, 1926; State Commercial Institute, Czechoslovakia, 1929. Organization and management of Soviet collective farms. 1952. *Columbia.*

National Income and Social Accounting

Degrees Conferred

Joseph Grunwald, Ph.D., Columbia, 1950. National budgeting in Norway: a case study.

Gilbert P. Maynard, Ph.D., Iowa, 1951. A comparative analysis of business and national income concepts.

Thomas C. Schelling, Ph.D., Harvard, 1951. National income behavior: an introduction to algebraic analysis.

Theses in Preparation

Hector R. Anton, B.S., California (Los Angeles), 1942; M.B.A., 1947. Techniques of analysis of the flow of business funds. 1952. *Minnesota.*

Edward C. Budd, B.A., California, 1946. Labor's share in the national income. 1952. *California.*

Bahgat A. El-Tawil, B.Com., Fouad I University, Cairo, 1949. Amount and distribution of the national income of Egypt. 1952. *Columbia.*

WALLACE W. GARDNER, B.S.E., Purdue, 1943; M.B.A., Michigan, 1947. An investigation of the effect of the composition of liquid assets held by individuals upon their propensity to save current income. 1952. *Michigan.*

PHILIP GOLDEN, B.A., Minnesota, 1942. Consumers expenditures on services since World War I. 1952. *Columbia.*

HARLOW W. HALVORSON, B.S., Minnesota, 1938; M.S., 1940. A study of agricultural income and its relation to national income. 1951. *Minnesota.*

ERNEST C. HARVEY, B.Com., British Columbia, 1941; B.A., 1942; M.A., Columbia, 1948. A study of Arkansas income. 1952. *Columbia.*

ELDON S. HENDRIKSEN, B.S., California, 1941; M.B.A., 1947. An investigation of the relationship of capital consumption to national economic activity. 1952. *California.*

CHIA-KUEI HSIAO, B.A., National Tsing Hua, 1939; M.A., Columbia, 1949. The national income of the United States and China. 1951. *Columbia.*

HYMAN MENDUKE, B.A., Pennsylvania, 1943; M.A., 1948. Shares of upper income groups in income by states. 1952. *Pennsylvania.*

PAUL R. NICHOLS, B.S., New Hampshire, 1940; M.A., Connecticut, 1942; M.A., Harvard, 1949. An investigation of the effects of certain population changes on personal saving in the United States. 1951. *Harvard.*

HARRY T. OSHIMA, B.A., Hawaii, 1940. International comparisons of national income. 1953. *Columbia.*

ROBERT R. SCHUTZ, B.S., Minnesota, 1939; M.S., 1941. Transfer payments and income inequality. 1952. *California.*

EVERETT P. TREUX, B.A., William Jewell, 1952; M.A., Missouri, 1946. Income structure of economic areas in North Carolina. 1952. *North Carolina.*

LOUIS WINNICK, B.A., Brooklyn, 1946; M.A., Columbia, 1947. Residential wealth estimates. 1952. *Columbia.*

Business Fluctuations; Prices

Degrees Conferred

LAWRENCE ANTONELLIS, Ph.D., Harvard, 1951. Statistical testing of economic theories: a critical appraisal.

LEO BARNES, Ph.D., New School for Social Research, 1948. An experiment that failed—an analysis of economic forecasting in American reconversion 1945-46.

HAROLD K. CHARLESWORTH, Ph.D., Wisconsin, 1950. The economics of repressed inflation.

GLADYS N. CONLY, Ph.D., Wisconsin, 1951. Business cycles and municipal finance in Los Angeles County.

ROBERT EISNER, Ph.D., Johns Hopkins, 1951. Capital accumulation and business cycles: a theoretical exploration.

BERT G. HICKMAN, JR., Ph.D., California, 1951. Cyclical fluctuations in the cotton textile industry.

EVA L. MUELLER, Ph.D., Harvard, 1951. Business savings and the business cycle.

HAROLD J. PLOUS, Ph.D., Wisconsin, 1950. The hazards of full employment.

LAWRENCE S. RITTER, Ph.D., Wisconsin, 1951. The control of inflation: direct versus monetary fiscal measures.

ARNOLD W. SAMETZ, Ph.D., Princeton, 1951. Secular stagnation in a maturing economy.

BAREND A. DE VRIES, Ph.D., Massachusetts Institute of Technology, 1951. Study of the price effects of exchange depreciation.

ARTHUR A. WICHMANN, Ph.D., Northwestern, 1951. Fluctuations in the level of income, employment, and output: a comparative study of the theoretical views and policy proposals of Clark Warburton and Frank D. Graham.

Theses Completed and Accepted

WELLINGTON J. VOSS, B.A., Catholic, 1918; M.A., 1942. History of the development of the department store indexes of the Federal Reserve System. *Catholic.*

Theses in Preparation

Daniel S. Ahearn, B.A., Columbia, 1949. Short-term fluctuations in the American economy, 1919-1950. 1953. *Columbia.*

Ruben C. Bellan, B.A., Manitoba, 1938; M.A., Toronto, 1941. Business fluctuations in Winnipeg from 1900. 1953. *Columbia.*

Vivian Carlip, B.A., Radcliffe, 1945; M.S., Iowa State, 1946. Price flexibility. 1952. *Columbia.*

Grant C. Chave, B.A., Oberlin, 1943; M.A., Chicago, 1948. The opinions of organized groups concerning inflation during the period 1946-1948. 1952. *Chicago.*

Sidney E. Chernik, B.A., Manitoba, 1947; M.A., Toronto, 1948. The terms of trade and economic fluctuations. 1951. *Massachusetts Institute of Technology.*

Philip J. W. Glaessner, B.A., Cambridge, 1940; M.A., 1944. Economic development and the inflationary potential. 1952. *Columbia.*

James W. Harvey, B.A., British Columbia, 1946. A study in the international transmission of business cycles: the 1929 downturn in the United States, Great Britain, and Canada. 1951. *California.*

John D. Helmberger, B.S., Duluth State Teachers' College, 1941; M.S., Minnesota, 1947. Consumer credit and business stability. 1952. *Minnesota.*

Charles C. Holt, B.S., Massachusetts Institute of Technology, 1944; M.S., 1944; M.A., Chicago, 1950. Analysis of selected proposals for mitigating undesirable effects of price level changes. 1952. *Chicago.*

Robert G. James, B.B.A., Northwestern, 1945; M.B.A., Harvard, 1948. Corporate reporting under changing price levels. 1952. *Harvard.*

Jacqueline R. Kason, B.A., California, 1945; M.S., Columbia, 1947. Social aspects of business cycles in the Los Angeles area. 1953. *Columbia.*

David T. Lapkin, B.A., Harvard, 1942; M.A., Columbia, 1947. Business cycles in the Pacific Northwest, a study in regional business cycles. 1952. *Columbia.*

Francis H. Leacy, B.A., British Columbia, 1941. Price behavior in Canadian business cycles. 1952. *Columbia.*

Warren D. McClam, Jr., B.S., California, 1947. Suppressed inflation in the United Kingdom—a study of the internal history and theoretical implications of controlled inflation. 1952. *California.*

Lewis N. Osterman, B.A., Yale, 1949; M.A., Columbia, 1951. An analysis of the depression of 1949, emphasizing monetary and fiscal measures. 1953. *Columbia.*

Newton Y. Robinson, B.S., Columbia, 1949; M.S., 1950. Hicks' contribution to the theory of the trade cycle. 1953. *Columbia.*

Arthur R. Rosenbaum, B.A., Brooklyn, 1939; M.A., Columbia, 1941. Business attitudes toward counter-cyclical planning, 1929-1949. 1952. *Columbia.*

Frederick Sass, B.S.Ed., Temple, 1938. Cyclical fluctuations in numbers and liabilities of business failures. 1952. *Pennsylvania.*

James R. Shimizu, B.A., Syracuse, 1944. A psychological theory of speculative prices. 1952. *Harvard.*

Eleanor M. Snyder, B.A., Connecticut College, 1936; M.A., Columbia, 1938. Interactions of levels of prices, income and family expenditures. 1952. Columbia.

Bernard Sobin, B.S.S., College of the City of New York, 1938. Effects of monetary-fiscal policies on consumption and investment. 1952. *Columbia.*

Roger Williams, Jr., B.A., Reed, 1939. The use of subsidies in inflation control and economic mobilization. 1952. *Columbia.*

Elliot Zupnick, B.S., College of the City of New York, 1947; M.A., Columbia, 1949. The economics of full employment, inflation, and anti-inflationary policies. 1952. *Columbia.*

Money and Banking; Short-Term Credit; Consumer Finance

Degrees Conferred

William O. Anderson, Ph.D., Ohio State, 1950. An analysis of bank deposit balances.

John S. de Beers, Ph.D., Chicago, 1951. The Mexican peso, 1941-49.

EDWARD BERMAN, Ph.D., Harvard, 1951. A theory of assets.
IRVING BRECHER, Ph.D., Harvard, 1951. Monetary and fiscal thought and policy in Canada, 1919-1939.
ARTHUR N. BRICKNER, Ph.D., Columbia, 1950. Liquidity in commercial banking.
WINTHROP EVERETT, Ph.D., Pennsylvania, 1951. The earnings of commercial banks.
KERMIT O. HANSON, Ph.D., Iowa State (Ames), 1950. Federal land bank loan operations in western Washington 1917-49.
GERHARDUS P. DE KOCK, Ph.D., Harvard, 1951. A history of the South African Reserve Bank.
WILLIAM E. KOENKER, Ph.D., Ohio State, 1950. A study of bank failures in North Dakota.
BAEN E. LEE, Ph.D., Columbia, 1950. Modern banking reforms in China.
HERBERT J. MARKLE, Ph.D., Iowa, 1951. Money and banking as factors in economic progress, 1789-1913.
A. M. QUINTERO-RAMOS, Ph.D., New York, 1950. A history of money and banking in Argentina.
SAMUEL A. ROSENBERG, Ph.D., North Carolina, 1950. Credit unions in North Carolina.
FRANCISCO R. SAENZ, Ph.D., Columbia, 1951. The problem of exchange stabilization.
ROBERT P. SHAY, Ph.D., Virginia, 1951. An evaluation of regulation W as a selective device for the control of credit.

Theses Completed and Accepted

AGNES LIANG, B.A., Yenching University, 1935; M.A., Catholic, 1945. Banking structure of the United States in the 20th century. *Catholic.*
ROBERT C. WEEMS, B.S., Mississippi State, 1933; M.B.A., Northwestern, 1934. The Bank of the State of Mississippi: a pioneer bank of the old southwest, 1809-1844. *Columbia.*

Theses in Preparation

JAMES H. ASHIDA, B.A., Washington, 1941; M.A., Pennsylvania, 1947; M.A., Chicago, 1948. Monetary reconstruction in Japan. 1952. *Chicago.*
JOHN J. BALLES, B.S., Iowa, 1942; M.A., 1947. Credit controls and debt management (1946-1950). 1951. *Ohio State.*
RICHARD J. BANNON, B.A., Catholic, 1948; M.A., 1950. Historical development of the weekly Federal Reserve statement and its interpretation. 1953. *Catholic.*
LELAND L. BEIK, B.A., Union; M.B.A., Columbia, 1949. History of Federal Deposit Insurance Corporation. 1952. *Columbia.*
BEN H. VANDEN BELT, M.A., Michigan, 1950. The structure of interest rates. 1952. *Michigan.*
MORRIS BORNSTEIN, M.A., Michigan, 1948. The role of the banking system in the economic development of Brazil. 1952. *Michigan.*
HARRY BRANDT, B.A., Washington, 1947; M.S., Columbia, 1949. Post-war monetary and credit policy (1946-1950). 1952. *Columbia.*
ROBERT G. CONNORS, B.S., St. Louis, 1945; M.S., 1947. Lessons for American monetary policy from analogous English experience. 1952. *St. Louis.*
HELEN P. CRAFTON, M.A., Michigan, 1948. An historical aand theoretical study of regional interest rate differentials. 1952. *Michigan.*
JAY A. CRAVEN, B.A., Antioch, 1941; M.A., Arizona, 1947. Central banking in Argentina. 1952. *Southern California.*
PAUL G. DARLING, B.A., Yale, 1937; M.A., New York, 1947. Liquidity functions of a central bank. 1952. *Columbia.*
DAVID EASTBURN, B.A., Amherst, 1942; M.A., Pennsylvania, 1945. Real estate credit control as a selective instrument of monetary policy. 1952. *Pennsylvania.*
DAVID I. FAND, B.S., College of the City of New York, 1944; M.A., Chicago, 1950. Monetary theory of the Federal Reserve Board. 1951. *Chicago.*
MURRAY J. FRANKLIN, M.A., Michigan, 1947. An analytical, historical, and statistical study

of banking concentration in the United States, with particular reference to the period 1930-1950. 1952. *Michigan.*

TILFORD C. GAINES, B.S., Washington (St. Louis), 1948. M.A., 1948. The market for government securities. 1953. *Columbia.*

JOAN GILBERT, B.A., Radcliffe, 1946; M.A., 1948. The theory of the capital markets. 1951. *Harvard.*

BURTON H. GILDERSLEEVE, B.S., Iowa, 1926; M.B.A., New York, 1933. Trends toward monopoly in banking. 1952. *Ohio State.*

RAYMOND W. HEATWOLE, B.S., Virginia, 1939; M.A., 1947. South Carolina state cash depositories. 1953. *Virginia.*

JAMES HELLIE, B.S., Minnesota, 1926; M.A., 1945. Interest rate policy in the war and postwar periods. 1952. *Minnesota.*

EDWARD S. HERMAN, B.A., Pennsylvania, 1945; M.A., 1948. Federal Reserve Board's case against Transamerica Corporation. 1952. *California.*

HERBERT D. HOOVER, B.A., Michigan State, 1946; M.A., 1948. The home loan bank system. 1952. *Harvard.*

HENRY J. JAROCHE, M.A., Wayne, 1949. The influence of contemporaneous monetary theory on United States Senate in banking legislation from the first Congress to 1860. 1952. *Michigan.*

HARRY G. JOHNSON, B.A., Toronto, 1943; B.A. (Cantab.), 1946; M.A., Toronto, 1947; M.A., Harvard, 1949; M.A. (Cantab.), 1951. Changes in British joint-stock banking, 1930-1950. 1952. *Harvard.*

JAMES A. KOKORIS, M.A., Michigan, 1949. The role of finance and financial institutions in the economic development of Okayama, Japan, area. 1952. *Michigan.*

R. PIERCE LUMPKIN, B.A., Richmond, 1948; M.A., Harvard, 1950. Interregional balance of payments of New England, reconsidered. 1952. *Harvard.*

JOHN P. LUTZ, B.A., Amherst, 1936; M.B.A., Pennsylvania, 1938. Some problems of commercial bank reserves. 1952. *Pennsylvania.*

LAWRENCE J. MINET, B.A., Buffalo, 1948; M.S., Columbia, 1949. Changes in reserve requirements—commercial banks in the United States and foreign nations 1930-1950. 1953. *Columbia.*

HERBERT H. MITCHELL, B.S., Alabama, 1939; M.S., 1950. A history of commercial banking in North Carolina since the Civil War. 1952. *North Carolina.*

JACK N. OCKERLANDER, B.S., Eau Claire St. Teachers College, 1940; M.A., Virginia, 1949. Some aspects of Federal Reserve credit policy. 1951. *Virginia.*

CHARLES S. OVERMILLER, B.A., Ohio Wesleyan, 1947; M.A., Ohio State, 1948. The theory of monetary decentralization. 1951. *Ohio State.*

HAROLD F. RASMUSSEN, B.A., Dartmouth, 1938; M.A., Columbia, 1946. Changes in real cash balances and fluctuations in output. 1952. *Columbia.*

ANTHONY L. SANCETTA, B.A., Western Reserve, 1937; M.S., Columbia, 1939. The development of central banking in Italy. 1953. *Columbia.*

THOMAS C. SANDERS, B.A., Harvard, 1941; M.B.A., 1943. A proposal for the revision and integration of federal and state banking regulations. 1953. *Virginia.*

FRANK W. SCHIFF, B.A., Columbia, 1942. Monetary policy and the control of bank holdings of the national debt. 1952. *Columbia.*

HENRY SCHLOSS, B.A., Nebraska Wesleyan, 1946; M.B.A., Columbia, 1948. Bank for International Settlements reconsidered. 1953. *Columbia.*

WILBERT M. SCHNEIDER, B.A., Union College, 1940; M.B.A., Oklahoma, 1944. History, organization, and operation of the American Bankers Association. 1952. *Southern California.*

LEON M. SCHUR, B.A., Wisconsin, 1946. Influence exerted on the monetary authority. 1952. *Wisconsin.*

WARREN L. SMITH, M.A., Michigan, 1949. The level and maturity structure of interest rates. 1952. *Michigan.*

THOMAS I. STORRS, B.A., Virginia, 1940; M.A., Harvard, 1950. An appraisal of credit control devices. 1952. *Harvard.*

LYELL J. THOMAS, B.A., Berea, 1947; M.A., Virginia, 1949. An analysis of recent proposals for the restoration of the gold standard. 1953. Virginia.

LINDA W. M. TSAO, B.A., St. John's (China), 1945; M.S., Columbia, 1948. The gold problem. 1954. *Columbia.*

WILLIAM A. VOGELY, B.A., Kenyon, 1945; M.A., Princeton, 1947. The commodity reserve standard. 1952. *Princeton.*

CHARLS WALKER, B.B.A., Texas, 1947; M.B.A., 1948. Security market policies of the Federal Reserve System. 1952. *Pennsylvania.*

ERNEST W. WALKER, B.B.A., Mississippi, 1948; M.B.A., 1948. Growth and development of consumer credit agencies of Indiana. 1952. *Indiana.*

PHILIP M. WEBSTER, B.S., Wisconsin, 1947; M.S., 1948. The Bancamerica Corporation: a case study in monopoly and monopoly control in finance. 1952. *Wisconsin.*

HAROLD WOLOZIN, B.S., Tufts, 1942. Control of consumer credit in war time. 1951. *Columbia.*

Business Finance; Investments and Security Markets; Insurance

Degrees Conferred

THOMAS R. ATKINSON, Ph.D., Wisconsin, 1951. A survey of investment holdings of Wisconsin individuals.

JOSEPH S. BEGANDO, Ph.D., Illinois, 1951. A study of refinements in the incidents of business ownership from the medieval period to the twentieth century.

CALVIN H. BRAINARD, Ph.D., New York, 1951. Financial management of stock casualty insurance companies.

BERNADETTE V. CONRAD, Ph.D., New York, 1950. Financial policies of the motion picture industry.

JOHN COWEE, Ph.D., Wisconsin, 1951. Federal regulation of insurance.

DONALD J. HART, Ph.D., Wisconsin, 1951. A reappraisal of the sources of surplus profits in a sellers' market.

GEORGE E. HASSETT, JR., Ph.D., New York, 1951. Sinking funds in bonds of railroad, public utility, and industrial corporations.

WILLIAM M. HOWARD, Ph.D., Wisconsin, 1951. The use of budgets in financial planning.

DONALD L. MACDONALD, Ph.D., Pennsylvania, 1951. Economic aspects of direct placement of securities with special reference to the life insurance industry.

RODERICK F. MCDONALD, Ph.D., Northwestern, 1951. Adequacy of supply of business capital for the formation and growth of small enterprises.

ALICE M. MORRISON, Ph.D., Iowa State (Ames), 1950. Consumer's choice in insurance.

FRED A. ROBINSON, JR., Ph.D., New York, 1951. An inquiry into the dividend practice of industrial corporations.

OSCAR N. SERBEIN, JR., Ph.D., Columbia, 1951. Distribution of costs in life insurance.

EDWARD F. STAUBER, Ph.D., Catholic, 1951. Financial survey of building and loan associations in the District of Columbia in the 20th century. (Published by Catholic University Press)

BEN B. SUTTON, Ph.D., Wisconsin, 1951. The rights of stockholders.

GUY W. TRUMP, Ph.D., Iowa, 1951. The role of the Securities Exchange Commission in corporate reorganizations.

HOWARD A. WARD, Ph.D., St. Louis, 1951. Automobile installment financing, 1910 to mid-1950.

Theses Completed and Accepted

DONALD R. CHILDRESS, B.B.A., Southwestern, 1939; M.B.A., Pennsylvania, 1948. The taxation of life insurance companies. *Pennsylvania.*

H. LARRY WILSEY, B.S., Southern California, 1944; M.A., 1946. The Securities and Exchange Commission. *Cornell.*

Theses in Preparation

Adam S. Arnold, B.S., West Virginia State, 1947; M.B.A., Wisconsin, 1948. The flow of capital since 1940. 1952. *Wisconsin*.

Herbert M. Axford, B.Com., Manitoba, 1941; M.Com., Toronto, 1947. Expansion of medium size manufacturing corporations. 1951. *Wisconsin*.

Theodore Bakerman, B.A., Washington Sq. College of N.Y.U., 1940. Life insurance on the lives of women. 1951. *Pennsylvania*.

Walter G. Becker, B.A., Loyola, 1940; M.A., 1943. Certificate, University of Grenoble (France), 1945. Investment companies. 1951. *Iowa*.

Robert T. Collins, B.S., Iowa, 1939; M.A., Southern California, 1949. The taxation of insurance companies. 1952. *Southern California*.

Francis J. Corrigan, B.S., St. Louis, 1941; M.B.A., Stanford, 1943. The New York Stock Exchange: a study in economic self-government. 1952. *St. Louis*.

William O. Cummings, B.S., Pennsylvania, 1938. Management in ordinary life insurance agencies. 1951. *Pennsylvania*.

Manuel O. Diaz, B.A., Puerto Rico, 1942; M.A., Clark, 1943. The regulation of insurance in Puerto Rico. 1952. *Pennsylvania*.

David Felix, B.A., California, 1942; M.A., 1947. Capital investment and industrialization. 1952. *California*.

Victor B. Gerdes, B.S., Texas Technological, 1947; M.S., Wisconsin, 1950. Incorporation of business enterprises. 1951. *Wisconsin*.

Herbert C. Graebner, B.S., Valparaiso, 1930; M.B.A., Northwestern, 1931. Appraising the economic value of the human life. 1952. *Pennsylvania*.

Thomas B. Graham, B.S., Southern California, 1943; M.B.A., 1947. Investment trust funds. 1952. *Ohio State*.

John Kaney Hayes, B.A., St. Louis, 1940; M.A., 1946. The economic factors involved in the management of specialized investment trusts. 1952. *St. Louis*.

Fred A. Henningsen, B.A., Montana State, 1946; M.A., 1948. The development, scope and method of New York state regulation of insurance costs. 1952. *Pennsylvania*.

Raymond C. Jancauskas, B.A., Loyola, 1936; M.A., St. Louis, 1940. Analysis of recent major Canadian investments. 1952. *Columbia*.

Richard de R. Kip, B.S., Pennsylvania, 1936. Fraternal life insurance. 1951. *Pennsylvania*.

Mildred Laverell, B.A., Vassar, 1942; M.A., Pennsylvania, 1943. Factors determining holdings of cash by industrial corporations. 1951. *Pennsylvania*.

Robert Lekachman, B.A., Columbia, 1942. Investment outlay (with case study of book and job printing). 1952. *Columbia*.

John D. Long, B.S., Kentucky, 1942; M.B.A., Harvard, 1947. Methods of insurance agency continuation. 1952. *Indiana*.

Arthur Mason, B.S., Nebraska, 1942; M.A., 1947. Development of new life insurance companies in the United States since 1925. 1952. *Pennsylvania*.

John W. McKinney, B.A., Southern Methodist, 1937; M.A., Columbia, 1947. The financing of innovation. 1952. *Columbia*.

James M. Murphy, B.S., Indiana, 1943; M.B.A., 1948. The emerging role of the mutual investment company. 1952. *Indiana*.

Donald W. O'Connell, B.A., Columbia, 1937; M.A., 1938. Loan guarantees and insurance. 1951. *Columbia*.

John Pagani, B.S., Santa Clara, 1932. Cash funds in financial reporting. 1952. *Stanford*.

Jesse F. Pickrell, B.S., North Texas State College, 1946; M.B.A., 1948. An analysis of group accident and health insurance. 1951. Pennsylvania.

John E. Pierce, B.A., Tennessee, 1943; M.S., 1948. The integration of property forms of insurance. 1952. *Pennsylvania*.

Robert E. Schultz, B.S., Southern California, 1948; M.B.A., 1949. Life insurance investments in income-producing real estate. 1952. *Pennsylvania*.

Frank J. Schwentker, B.A., Harvard, 1928. An analysis of compensation of life insurance agents. 1952. *Pennsylvania*.

DONALD SCOLES, B.S., Northwestern, 1916; M.A., Pennsylvania, 1943. Development and application of the annuity principle by U.S. legal reserve life insurance companies. 1952. *Pennsylvania.*

JOSEPH SOSHNIK, B.Sc., Creighton, 1941; M.S., Denver, 1943. A program for providing long-term capital for operations in small business. 1952. *Nebraska.*

FRANK A. YOUNG, B.B.A., Southern Methodist, 1942; M.A., Michigan, 1948. Reinsurance in life insurance. 1951. *Pennsylvania.*

Public Finance

Degrees Conferred

DAVID M. BLANK, Ph.D., Columbia, 1950. Reform of state-local fiscal relations in New York State.

SIDNEY BORDEN, Ph.D., New York, 1951. The exemption of property from taxation.

JOHN W. BOWYER, D.C.S., Indiana, 1950. Government financing of private enterprise.

GEORGE F. BREAK, Ph.D., California, 1951. Some theoretical aspects of the federal taxation of capital gains and losses.

COLIN D. CAMPBELL, Ph.D., Chicago, 1950. True property tax rates in the United States, 1922-49.

LAWRENCE D. COOLIDGE, Ph.D., Columbia, 1950. Undistributed profits taxation in Australia, 1915-1949.

JOSEPH C. ELLETT, Ph.D., Virginia, 1951. Financing emergency relief through the FERA.

ARTHUR S. FEFFERMAN, Ph.D., New School for Social Research, 1950. The tax treatment of family income.

JOSEPH A. GREENE, Ph.D., Virginia, 1951. The taxation of public utilities in Virginia.

TUN YUAN HU, Ph.D., Columbia, 1950. The federal liquor tax in the United States.

JAMES B. LUDTKE, Ph.D., Iowa, 1951. Some aspects of national debt management.

ALFRED D. MORGAN, Ph.D., Harvard, 1951. Fiscal anatomy of wartime Japan, 1937-1945.

ERNEST F. PATTERSON, Ph.D., Texas, 1951. The finances of the national government of Argentina.

LOUIS SIEGELMAN, Ph.D., Pennsylvania, 1951. Development and analysis of the Pennsylvania public school subsidy 1834-1949.

GEORGE W. THATCHER, Ph.D., Wisconsin, 1951. Taxation of property in Ohio.

LAWRENCE E. THOMPSON, Ph.D., Harvard, 1951. Investment capacity and the personal income tax.

EARL K. TURNER, Ph.D., Kentucky, 1951. Design of an assessors' manual for a particular state.

G. CARL WIEGAND, Ph.D., Northwestern, 1951. Fiscal developments in postwar Germany and their economic, political, and monetary backgrounds.

Theses Completed and Accepted

HARVEY E. BRAZER, B.Com., McGill, 1943; M.A., Columbia, 1947. Coordination in Canadian federal finance. *Columbia.*

JOE S. FLOYD, JR., B.S., Florida, 1943; M.A., North Carolina, 1946. Interlocal tax differentials, with special reference to their effects on hosiery, furniture and tobacco firms in selected industrial states. *North Carolina.*

DANIEL M. HOLLAND, B.A., Columbia, 1941. The corporation tax as a personal tax. *Columbia.*

Theses in Preparation

MORRIS BECK, B.A., Pennsylvania State, 1942; M.A., Columbia, 1947. Tax treatment of business losses. 1952. *Columbia.*

TAYLOR L. BURTON, B.S., Oklahoma, 1942; M.S., 1948. Pressure and control exercised through the use of the grant-in-aid. 1952. *Columbia.*

LANG L. CANTRELL, B.A., California (Los Angeles), 1939; M.A., Southern California, 1948. The modernization of American property taxation. 1952. *Southern California.*

MARGARET M. CHARLESWORTH, B.Com., University of Queensland, Australia, 1942; M.S., Wisconsin, 1948. Incidence and effects of taxation under monopolistic competition. 1952. *Wisconsin.*

ALPHA CHUNG-I CHIANG, B.A., St. John's, 1946; M.A., Columbia, 1948. Income taxation in the federal state: a study of jurisdictional conflict. 1952. *Columbia.*

CHARLES D. CLEMENT, B.A., Piedmont, 1946. Trends in property tax exemption. 1953. *Virginia.*

LORNE D. COOK, M.A., Michigan, 1949. The economics of multilevel public finance. 1952. *Michigan.*

L. JOSEPH CRAFTON, M.A., Michigan, 1948. The effects of the corporate income tax on the quantity and types of investable funds. 1952. *Michigan.*

JOHN M. CULBERTSON, M.A., Michigan, 1947. The theory and history of public debt. 1952. *Michigan.*

DONALD J. DALY, B.A., Queens University, Canada, 1943; M.A., 1948. Forecasting Canadian federal tax yields. 1952. *Chicago.*

LENORE FRANE, M.A., Michigan, 1947. Depreciation: an aspect of net income for tax purposes. 1952. *Michigan.*

HENRY J. FRANK, B.S., Columbia, 1938; M.A., Rutgers, 1947. Municipal-federal fiscal relations. 1953. *Columbia.*

HUBERT H. FRISINGER, M.A., Michigan, 1948. Michigan state highway expenditure policy. 1952. *Michigan.*

JOHN G. GODAIRE, B.S., St. Louis, 1943; M.A., Harvard, 1950. St. Louis—an economic exploration of large city finance. 1951. *Harvard.*

RUDYARD B. GOODE, B.A., Davis-Elkins, 1947. The evolution of the tax system of West Virginia. 1953. *Virginia.*

HOWARD S. GORDMAN, M.A., Yale, 1936. Highway taxation. 1952. *Michigan.*

JOHN A. GRONOUSKI, JR., B.Ph., Wisconsin, 1942; M.Ph., 1947. Valuation of railroads for tax purposes. 1952. *Wisconsin.*

ERIC J. HANSON, M.A., Alberta. Financial history of the provincial government of Alberta. 1952. *Clark* (Worcester).

PEGGY HEIM, B.A., Duke, 1945; M.A., 1946. Financing federal irrigation projects through user charges. 1952. *Columbia.*

WILLIAM H. HICKMAN, B.S., Kansas State, 1941; M.A., Stanford, 1949. The burden of California taxes. 1952. *Stanford.*

JAMES E. JENSEN, B.A., Wisconsin, 1948; M.A., 1949. Federal government debt policy and its inflationary effect. 1952. *Wisconsin.*

JAMES W. JOHNSTON, B.A., Western Ontario, 1947; M.A., Brown, 1949. Death and gift taxes in Canada. 1952. *Indiana.*

CHARLES H. KAHN, B.A., Vanderbilt, 1947; M.A., Wisconsin, 1950. Income sensitivity of state tax yields. 1952. *Wisconsin.*

BENJAMIN J. KATZ, B.A., Brooklyn, 1946; M.A., Harvard, 1949. State taxation in New Hampshire. 1952. *Harvard.*

MURRAY C. KEMP, B.Com., University of Melbourne, 1946; B.A., 1947; M.A., 1949. The shifting and incidence of taxation in general equilibrium models. 1952. *Johns Hopkins.*

HENRY K. KRAUSKOPF, B.B.A., Cincinnati, 1940; M.A., Columbia, 1949. The Reconstruction Finance Corporation in war and peace, 1942-49. 1951. *Columbia.*

DONOR M. LION, B.A., Harvard, 1945; M.A., Buffalo, 1948. The federal debt and economic activity, 1900-1950. 1951. *Harvard.*

DALE C. MARCOUX, B.S., Kansas, 1929; M.B.A., 1937. The level of the federal personal income tax exemption. 1953. *Minnesota.*

THOMAS E. MCMILLAN, JR., B.A., Texas, 1947; M.A., 1948. The introduction of an income tax in Texas. 1952. *Wisconsin.*

HARLAN B. MILLER, An analysis of Colorado business taxes. 1952. *Colorado.*

FRANK E. MORRIS, M.A., Michigan, 1949. Criteria for government lending. 1952. *Michigan.*

LAWRENCE B. MYERS, B.S., Temple, 1945; M.A., Wisconsin, 1947. Some aspects of Swedish public finance. 1952. *Wisconsin.*

CHESTER MYSLICKI, M.A., Michigan, 1949. Problems of debt management. 1952. *Michigan.*

LEON J. QUINTO, B.A., Columbia, 1946; M.A., 1948. The municipal income tax: the answer to New York City's post-war financial problems? 1952. *Columbia.*

RAYMOND L. RICHMAN, L.L.B., Chicago-Kent College of Law, 1940; M.A., Chicago, 1948. The economic effects of the tax treatment of capital gains and losses in the United States and Great Britain. 1952. *Chicago.*

ROBERT J. SCHIER, B.A., Rochester, 1943; M.P.A., Wayne, 1949. A reappraisal of the concept, the potentialities, and the limitations of fiscal policy in the United States. 1951. *Southern California.*

MORTON J. SCHUSSHEIM, B.A., Western Reserve, 1947; M.A., Harvard, 1949; M.P.A., 1949. The revenue-expenditure pattern of Massachusetts and its political subdivisions. 1951. *Harvard.*

ELI SCHWARTZ, B.S., Denver, 1943; M.A., Connecticut, 1948. Studies in redistribution of income through public finance. 1952. *Brown.*

FRANCIS J. SHANNON, B.A., Notre Dame, 1947; M.P.A., Wayne, 1951. An analysis of various statewide programs to improve local assessments. 1951. *Kentucky.*

SHERMAN SHAPIRO, B.A., Queens; M.A., Chicago, 1951. A theory of public expenditures: state-local expenditures in the United States. 1952. *Chicago.*

ROBERT B. SHULMAN, M.A., Michigan, 1951. Some cyclical aspects of selected state taxes and tax and expenditure systems. 1952. *Michigan.*

ARNOLD M. SOLOWAY, B. A., Brown, 1942; M.A., 1948. The purchase tax and fiscal policy. 1952. *Harvard.*

LEE C. SOLTOW, B.A., Wisconsin, 1948; M.A., 1949. State income tax yields. 1952. *Wisconsin.*

RICHARD E. SPEAGLE, B.A., California (Los Angeles), 1946; M.A., 1947; M.A., Princeton, 1949. Comparative public debt policy, 1939-1949, the United States, Canada, and United Kingdom. 1953. *Princeton.*

FREDERICK STOCKER, B.A., Lehigh, 1947. Local non-property taxes. 1952. *Cornell.*

GOLDIE STONE, B.A., Hunter, 1943; M.A., New York, 1945. A study of the relief provisions of Section 722 of the Excess Profits Tax law. 1953. *Columbia.*

RICHARD K. STUART, B.S., Rhode Island State, 1938; M.S., 1940. Financing public improvements in Maine. 1951. *Pennsylvania.*

CLARA G. SULLIVAN, B.A., Mt. Holyoke, 1936; M.A., Columbia, 1942. The value-added tax. 1952. *Columbia.*

MILTON C. TAYLOR, B.S.A., British Columbia, 1939; M.S.A., 1946. The Michigan sales tax with particular reference to administrative problems. 1952. *Wisconsin.*

CAREY C. THOMPSON, B.A., Texas, 1928; M.A., 1931. Financial aspects of unemployment compensation. 1951. *North Carolina.*

WILBUR R. THOMPSON, M.A., Michigan, 1949. Institutional aspects of fiscal policy: a regional approach. 1952. *Michigan.*

NORMAN B. TURE, M.A., Chicago, 1947. Federal debt policy during the war years. 1952. *Chicago.*

JAMES E. WALTER, B.A., Duke, 1942; I.A., Harvard, 1943. The problem of the national debt. 1952. *California.*

ULRIC H. WEIL, B.Com., McGill, 1945. Enforcement of the individual income tax: theory, practice, and performance. 1951. *California.*

ROBERT H. WESSEL, B.A., Cincinnati, 1946; M.A., 1946. A re-examination of the theory of the incidence of taxation. 1952. *Cincinnati.*

MILTON WILSON, B.A., West Virginia State, 1937; M.C.S., Indiana, 1945. The technical determination of net income tax liability under the laws of the United States and selected states. 1951. *Indiana.*

ROBERT L. WINESTONE, B.A., Oregon, 1939; M.A., 1942. The undistributed profits tax as a counter-cyclical device. 1952. *Northwestern.*

JESSE D. WINZENREID, B.S., Wyoming, 1945; M.S., Denver, 1946. The state of Wyoming: a history and evaluation of financial administration. 1952. *New York.*

LAURENCE N. WOODWORTH, B.A., Ohio Northern, 1940; M.S., Denver, 1943. United States taxation of income earned abroad. 1952. *New York.*

CHAO-HSUN WU, B.A., St. John's, Shanghai, 1945; M.A., Illinois, 1948. Inter-jurisdictional fiscal relations in federal and unitary countries. 1952. *Columbia.*

PETE ZIDNAK, B.S., Loyola (Los Angeles), 1949; M.A., Southern California, 1950. An economic appraisal of the Reconstruction Finance Corporation. 1953. *Southern California.*

International Economics

Degrees Conferred

MARTHA S. ATKINSON, Ph.D., Wisconsin, 1951. The Benelux economic union: problems and achievements.

DONALD G. BADGER, Ph.D., George Washington, 1951. The balance of payments: a tool of economic analysis.

JACK F. BENNETT, Ph.D., Harvard, 1951. Theory and practice of international payments agreements.

OCTAVIO A. DIAS CARNEIRO, Massachusetts Institute of Technology, 1951. Study on the theory of international economic organization.

GABRIEL F. CAZELL, Ph.D., Minnesota, 1950. A postwar tin policy for the United States.

YEHIA EL-MOLLA, Ph.D., Harvard, 1951. Major aspects of American-Egyptian economic relationships.

WAYNE F. GEISERT, Ph.D., Northwestern, 1951. Transport costs in the theory of international trade.

JOHN HUNTER, Ph.D., Harvard, 1951. A case study of economic development of an underdeveloped country: Cuba, 1899-1935.

WILLIAM T. KELLEY, Ph.D., Pennsylvania, 1951. Wheat under control: a study of international wheat agreements.

JOHN M. LETICHE, Ph.D., Chicago, 1951. Studies in the theory of the international mechanism of adjustment.

JAMES R. MADDOX, Ph.D., Illinois, 1951. International balance of payments adjustments under the gold standard.

KATHRYN MCNAMARA MITCHELL, Ph.D., Pittsburgh, 1951. United States canned foods in international trade.

ERVIN MILLER, Ph.D., Pennsylvania, 1951. Exchange rates and practices in a world of abridged competition.

ILSE MINTZ, Ph.D., Columbia, 1951. The decline in quality of American investments, 1920-1930.

EDITH PENROSE, Ph.D., Johns Hopkins, 1951. The economics of the international patent system.

ALFRED S. RAY, Ph.D., Michigan, 1951. The problem of economic development in backward areas with special reference to Iran.

FRANKLIN R. ROOT, Ph.D., Pennsylvania, 1951. The international trade of Great Britain—a study in economic interdependence.

ZAKI M. SHABANA, Ph.D., Wisconsin, 1951. Competitive situation of Egyptian cotton.

DELBERT A. SNIDER, Ph.D., Chicago, 1951. Monetary, exchange, and trade problems in postwar Greece.

Theses Completed and Accepted

GODFREY BRIEFS. Shifting patterns of trade. *Harvard.*

NIHAD IBRAHIM—PASHA, Baccalaurist, Aleppo, 1941; in philosophy, 1942; Licence in Law, Beirut, 1942. Foreign trade and the Syrian economy. *Columbia.*

Theses in Preparation

CARL E. ABNER, B.A., Queens University (Ontario, Canada), 1942; M.A., Columbia, 1948. Commercial policy under the international trade organization. 1951. *Columbia.*

HOWARD K. AMMERMAN, B.S., Kentucky, 1941; M.A., Chicago, 1950. Canadian devaluation, 1949. 1952. *Chicago.*

DANIEL ARRILL, B.S.S., College of the City of New York, 1942; M.A., Columbia, 1948. The terms of trade, a theoretical and statistical analysis. 1952. *Columbia.*

JACK N. BEHRMAN, B.S., Davidson, 1943; M.S., North Carolina, 1945; M.A., Princeton, 1950. The role of government in international financial affairs of the United States since World War II. 1952. *Princeton.*

PHILIP W. BELL, B.A., Princeton, 1947; M.A., California, 1948; M.A., Princeton, 1950. The sterling area as a multilateral trading system and its problems, 1946-1950. 1952. *Princeton.*

CHARLES S. BENSON, B.A., Princeton, 1943; M.A., Columbia, 1948. United States imports of primary commodities since 1870. 1952. *Columbia.*

RAGHBIR S. BHATIA, B.A., Punjab, 1945; M.A., Indiana, 1950. Role of foreign investment in the economic development of South Asia. 1953. *Columbia.*

HARRY R. BIEDERMAN, B.A., California (Los Angeles), 1948; M.A., Columbia, 1949. International aspects of the U.S. agricultural policies. 1952. *Columbia.*

JAHANGIR AMOUZEGAR, Licenciate, University of Tehran, 1941; M.A., Washington, 1948. Iran and the Point Four Program. 1953. *California* (Los Angeles).

RICHARD G. BIRNBERG, B.A., Columbia, 1941; M.A., Chicago, 1948. Theory of a persistent "Dollar Shortage" and a stable multilateral open trading system. 1952. *Chicago.*

MARCUS C. BRUHN, B.Ed., Eau Claire Teachers College, 1934; M.A., Minnesota, 1942. Swedish balance of payments, 1920-1950. 1952. *Wisconsin.*

BUE BRUN, B.A., University of Oslo, 1943; M.A., Fletcher School, 1948. International maritime policy. 1952. *Fletcher School of Law and Diplomacy.*

RONDO E. CAMERON, B.A., Yale, 1948; M.A., 1949. French foreign investment, 1815-1870. 1951. *Chicago.*

ROBERTO DE OLIVEIRA CAMPOS, Philosophy and Classical Letters, Brazil, 1932; M.A., George Washington, 1947. Terms of trade and economic development. 1952. *Columbia.*

WILLIAM B. DALE, B.A., Michigan, 1944; M.A., Fletcher School, 1947. Full employment and American foreign policy. 1952. *Fletcher School of Law and Diplomacy.*

ROBERT W. DAVENPORT, B.A., Washington, 1943; M.A., Fletcher School, 1944. Soviet economic relations with Iran. 1952. *Columbia.*

NAZIH A. DEIF, B.Com., Fouad I University (Egypt), 1944. Egypt's post war II balance of trade. 1951. *Chicago.*

M. AUDREY DICKERSON, B.S., Miner Teachers College, 1940; M.A., Catholic, 1941. Western Europe's balance of payments during the post-war recovery period. 1952. *Columbia.*

FRANCOIS M. DICKMAN, B.A., Wyoming, 1947; M.A., Fletcher School, 1948. The economic foreign policy of the United States in Western Europe from 1945-48. 1952. *Fletcher School of Law aand Diplomacy.*

WILLIAM A. DYMSZA, B.A., Pennsylvania State, 1943; M.B.A., Pennsylvania, 1948. U.S. private long-terms investments in South America: an inquiry into their economic effects upon the area. 1951. *Pennsylvania.*

HARRY C. MACC. EASTMAN, B.A., Toronto, 1947; M.A., Chicago, 1949. Postwar Canadian commercial policy. 1952. *Chicago.*

MAURICE C. ERNST, B.A., Yale, 1948. Belgium's monetary and foreign exchange policy, 1944-1951. 1953. *Columbia.*

KURT FLEXNER, B.S., Johns Hopkins, 1946. The European Payments Union: its aims and prospects.. 1952. *Columbia.*

GEORGE P. FOUSEK, B.A., Cambridge, 1946; M.A., Columbia, 1947. Devaluation of the pound. 1953. *Columbia.*

JOHN O. GALLAGHER, B.A., Tufts, 1943; M.A., Fletcher School, 1948. The London Monetary Conference of 1933. 1951. *Fletcher School of Law and Diplomacy.*

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Vernon H. Grigg, B.Com., British Columbia, 1943; M.A., 1949. International price structure in petroleum. 1952. *Massachusetts Institute of Technology.*

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Robert W. Harrington, M.A., Iowa, 1948. Partnership control of international equity capital. 1952. *Iowa.*

Joseph A. Hasson, B.A., Washington, 1943; M.B.A., Chicago, 1947; M.A., 1950. Stabilization attempts in a "Dependent" economy and the effects on its balance of payments—a case study of Australia. 1951. *Chicago.*

Hugh K. Hawk, B.A., Birmingham-Southern, 1941; M.A., Virginia, 1943. International aspects of the aluminum industry. 1952. *Virginia.*

Rolf Hayn, B.A., Indiana, 1944; M.A., 1948. Peruvian foreign exchanges, 1929-1950. 1952. *Wisconsin.*

Charles Hoffman, B.A., Queens, 1942; M.A., Columbia, 1947. International industrial efficiencies and comparative cost theory. 1951. *Columbia.*

Chi-Ming Hou, L.L.B., Catholic, Peiping, 1945; M.A., Oregon, 1949. A comparative study of the role of foreign capital in China and India's economic development. 1953. *Columbia.*

William A. Jaracz, B.S., Harvard, 1946; M.B.A., Pennsylvania, 1948. Foreign commercial policy of Poland. 1952. *Pennsylvania.*

Salamon S. J. Kagan, Diplom-Ingenieur, Berlin, 1931; M.A., American, 1949. Domestic obstacles to economic development of backward countries. 1952. *Columbia.*

Marvin M. Kristein, B.A., College of the City of New York, 1947; M.A., Columbia, 1949. International capital movements in the U.S., 1879-1900. 1953. *Columbia.*

Richard S. Landry, B.A., Amherst, 1938; M.A., Chicago, 1941. Unfair competition in foreign trade. 1951. *Chicago.*

Will E. Mason, B.A., Pacific, 1935; M.A., Washington, 1942; M.A., Princeton, 1947. Inductive verifications of the classical theory of adjustment to unilateral capital transfers. 1951. *Princeton.*

John McKnight, B.S.S., College of the City of New York, 1939; M.A., Columbia, 1947. United States-Canadian trade, 1932-1938. A study in the income and expenditure approach to the theory of international trade. 1953. *Columbia.*

Gilbert M. Mellon, M.A., Pittsburgh, 1949. Some economic implications of the Point Four idea. 1951. *Pittsburgh.*

Krishna Mohan, B.A., Delhi, 1945; M.A., Madras, 1947. Japanese balance of payments, 1900-1910. 1951. *Wisconsin.*

Subimal Mookerjee, M.A., Calcutta, 1946; M.A., Harvard, 1950. Sterling area: its evolution and mechanism. 1951. *Harvard.*

Russell J. Morrison, B.A., Saskatchewan, 1944; M.A., Toronto, 1947. Trends in Canadian wheat policy. 1951. *Chicago.*

Norman W. Mosher, B.A., Maine, 1943; M.A., 1947; M.A., Fletcher School, 1948. State trading and Great Britain: a case study of state trading, methods of its implementation, the effects on the national economy, and its relation to multilateral trade. 1952. *Fletcher School of Law and Diplomacy.*

J. E. Moyer, B.S., Illinois, 1947; M.S., 1948. Postwar United States-Italian economic relationships. 1951. *Illinois.*

John E. Murphy, B.S., College of the City of New York, 1942; M.A., Columbia, 1948. An appraisal of the sterling area (with special reference to Great Britain's role in the area). 1952. *Columbia.*

Maxwell Obst, Intra-European movements of capital in the postwar period. 1952. *Chicago.*

Robert W. Oliver, B.A., Southern California, 1943; M.A., 1947; M.A., Princeton, 1950. The International Bank for Reconstruction and Development. 1953. *Princeton.*

Shantilal N. Patel, B.Com., Sydenham, 1946; M.B.A., Pennsylvania, 1948. Commercial relations between India and Pakistan. 1952. *Pennsylvania.*

Henry A. Peck, B.A., Tufts, 1942; M.A., Fletcher School, 1947. Freedom, planning, and international trade. 1951. *Fletcher School of Law and Diplomacy.*

Richard Perlman, B.A., Cornell, 1947; M.A., Columbia, 1949. New trends in the theory of international capital movements. 1952. *Columbia.*

Neal Potter, B.A., Minnesota, 1937; M.A., 1940. Geneva Trade Agreements and the International Trade Organization. 1951. *Chicago.*

Otto R. Reischer, B.A., Michigan, 1946; M.A., Columbia, 1948. Studies in Soviet foreign economic policy. 1952. *Columbia.*

Romney Robinson, B.A., McMaster, 1948; M.A., Toronto, 1949. Discrimination in international trade. 1952. *Massachusetts Institute of Technology.*

Alexander M. Rosenson, B.S., California, 1937; M.A., 1938. Aspects of British postwar external finance. 1951. *Chicago.*

Stephen W. Rousseas, B.S., Columbia, 1948; M.A., 1949. The pure theory of the gains from international trade. 1952. *Columbia.*

Antioco Sacasa, B.A., Institute Nacional, Leon, Nicaragua, 1939; B.S., 1939; Doctor en Derecho, Universidad de Leon, Nicaragua, 1939; M.A., Ohio State, 1944. Central America: economic analysis. 1952. *Minnesota.*

Wilson E. Schmidt, B.S., Maryland, 1947; M.A., Pittsburgh, 1948. Multiple exchange rates in Latin America. 1952. *Virginia.*

Mary A. Shulman, M.A., Michigan, 1948. The changing pattern of foreign United States trade—prewar and postwar, and its relationship to location theory. 1952. *Michigan.*

Gerald Sirkin, B.A., Harvard, 1942; M.A., Columbia, 1948. The effects of the British devaluation of the pound. 1952. *Columbia.*

Herman T. Skofield, B.A., New Hampshire, 1947; M.A., Fletcher School, 1948. Private foreign investment. 1952. *Fletcher School of Law and Diplomacy.*

David W. Slater, B.Com., Manitoba, 1942; B.A., Queens University (Canada), 1947; M.A., Chicago, 1950. Production adaptations in international economic adjustments. 1952. *Chicago.*

Morton Solomon, B.A., Chicago, 1941; M.A., Harvard, 1948; M.P.A., 1948. Economic underdevelopment in free economies. 1951. *Harvard.*

Augustus W. Springer, Jr., B.A., Michigan, 1946; M.A., Virginia, 1951. Recovery of foreign trade in the postwar economy of Japan. 1952. *Virginia.*

Nicolas Spulber, Baccalaureat, Jassy, 1930; M.A., University of Bucharest, 1934; M.A., New School for Social Research, 1950. On the economic relations between the USSR and the eastern European countries after World War II. *New School for Social Research.*

Irving Stone, B.S.S., College of the City of New York, 1946; M.A., Columbia, 1948. Changes in British overseas investment, 1939-1945. 1952. *Columbia.*

Wei-Tseng Sze, B.A., St. John's (Shanghai), 1946; M.L., Pittsburgh, 1950. International trade in wheat. 1951. *Pittsburgh.*

Violette E. Thouvenin, B.A., Hunter, 1944; M.A., Columbia, 1945. Currency convertability in Western Europe. 1952. *Columbia.*

Donald M. Troup, B.S., Mt. St. Mary's, 1943; M.A., Catholic, 1948. Lend lease: a new approach to the problems of intergovernmental debts. 1953. *Catholic.*

Naomi Waxman, B.A., Chicago, 1940. Forms and effects of industrialization in the development of under-developed areas. 1952. *Columbia.*

Mervyn Weiner, B.Com., McGill, 1943; B.Ph., Oxford, 1948. Price stabilization of internationally traded primarry commodities. 1952. *Johns Hopkins.*

Leonard W. Weiss, B.S., Northwestern, 1945; M.A., Columbia, 1949. The British colonies in the sterling area balance of payments. 1952. *Columbia.*

Leland B. Yeager, B.A., Oberlin, 1948; M.A., Columbia, 1949. An evaluation of freely fluctuating exchange rates. 1953. *Columbia.*

Business Administration

Degrees Conferred

GEORGE A. BALLENTINE, Ph.D., Columbia, 1951. Sales quotas—their use in planning sales activities.

ALBERT L. BELL, Ph.D., Pennsylvania, 1951. A critical analysis and evaluation of the functioning of fixed capital accounting in its relationship to profit measurement during periods of price level changes.

THORNTON F. BRADSHAW, D.C.S., Harvard, 1951. Developing men for controllership.

STANLEY E. BRYAN, D.C.S., Indiana, 1950. Program for materials management.

JAMES D. BUTTERWORTH, Ph.D., Northwestern, 1951. A study of the changes in the volume of fresh fruits and vegetables handled by middlemen operating in the Chicago South Water Market, 1938-1949.

WILLIAM F. CRUM, Ph.D., Texas, 1951. A study of the force and effect of the accounting research bulletins of the American Institute of Accountants on the published corporate annual reports of 665 corporations.

W. ARTHUR CULLMAN, Ph.D., Ohio State, 1951. The marketing of tobacco products.

WILLIAM R. DAVIDSON, Ph.D., Ohio State, 1951. Use, productivity, and allocation of space resources in department stores.

ARMAND V. FEIGENBAUM, Ph.D., Massachusetts Institute of Technology, 1951. Membership relationship problems in the announced-purpose centered aggregation.

FRANCISCIUS X. HARRISON, Ph.D., Iowa, 1951. Preparation and use of the organization manual.

MILAN R. KARAS, Ph.D., Ohio State, 1951. The contributions made by wholesalers to the economy of Hamilton County, Ohio.

HENRY A. KRIEBEL, Ph.D., Columbia, 1951. Case studies on the adequacy of the amount of reported depreciation charges in a period of rising prices.

JAMES B. LACKEY, JR., D.C.S., Harvard, 1950. Transportation-advertising 1940-1948.

PAUL R. LAWRENCE, D.C.S., Harvard, 1950. A case study of the human aspects of introducing a new product into production.

ELZY V. MCCOLLOUGH, JR., Ph.D., Iowa, 1951. An evaluation of proposals to reinstate fully amortized emergency war facilities when they are useful for post-war operations.

JOSEPH P. MCKENNA, Ph.D., Harvard, 1951. Demand for durable consumer goods.

STUART B. MEAD, D.C.S., Indiana, 1950. A study of special post war reserves of 134 manufacturing corporations.

FRANK H. MOSSMAN, Ph.D., Northwestern, 1951. The training of salesmen in machine tool manufacturing companies.

THOMAS R. NAVIN, D.C.S., Harvard, 1950. History of Whitin Machine Works.

WILLIAM J. PARISH, D.C.S., Harvard, 1950. History of Charles Ilfeld Company.

JOHN M. RATHMELL, Ph.D., Pennsylvania, 1951. The commercial exhibit as a marketing device.

JACK S. SCHIFF, Ph.D., New York, 1951. Sales training—the measurement of its effectiveness.

CARL B. STRAND, Ph.D., Iowa, 1951. An analysis of the objectives and methods of sales training in American manufacturing enterprises.

EDWARD R. WILLETT, Ph.D., Harvard, 1951. Radio parts distribution industry in New England.

FRANCIS A. WINGATE, Ph.D., Ohio State, 1950. A study of price formation at the retail level with special reference to Syracuse, New York.

ABRAHAM ZALEZNIK, D.C.S., Harvard, 1951. Foreman training.

MOSTAFA H. ZOHEIR, Ph.D., Iowa, 1951. Development of major approaches to the study of marketing.

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CHRIS ARGYRIS, B.A., Clark, 1947; M.A., Kansas, 1949. A study of a pattern of managerial leadership. *Cornell.*

ROBERT C. AUSTIN, B.A., Tennessee, 1940; M.A., Harvard, 1942. Marketing problems in U.S. cigarette tobacco. *Harvard.*

JAMES COOGAN, B.A., Harvard, 1942; M.A., 1947. Sales tax in the Soviet Union. *Harvard.*

FELICIAN FOLTMAN, B.S., Oswego State Teachers College, 1940; M.S., Cornell, 1947. Factors bearing on supervisory morale. *Cornell.*

DONALD C. JOHNSON, B.A., Harvard, 1946; M.B.A., Indiana, 1951. Effects of taxation and non-financial motivation on compensation and incentives for industrial executives. *Indiana.*

LOUIS R. SALKEVER, B.A., Pennsylvania, 1936. Toward a theory of occupational wage differentials. *Cornell.*

CHARLES M. WILLIAMS, B.A., Washington and Lee, 1937; M.B.A., Harvard, 1939. Cumulative voting for corporate directors. *Harvard.*

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ROBERT N. ANTHONY, B.A., Colby, 1938; M.B.A., Harvard, 1940. The administrative control of research. 1951. *Harvard.*

GORDON G. BARNEWALL, B.S., Colorado, 1947; M.B.A., Ohio State, 1948. An analysis of shoppinng centers in the Washington, D.C., trading area. 1951. *Ohio State.*

CHARLES E. BASTABLE, JR., B.S., Columbia, 1938; M.S., 1939. The presentation of accounting to general students of business. 1952. *Columbia.*

JAMES L. BAYLESS, B.A., Kansas State Teachers College, 1936; M.A., Iowa, 1941. The changing role of the wholesale grocer in the Iowa market. 1952. *Iowa.*

DONALD R. BOOZ, B.A., Williams, 1942; M.B.A., Harvard, 1947. The Jewel Tea Company, 1951. *Harvard.*

EDWARD H. BOWMAN, B.S., Massachusetts Institute of Technology, 1948; M.B.A., Pennsylvania, 1949. Organizational problems in executive job evaluation and salary administration. 1952. *Ohio State.*

WILLIAM E. BREESE, B.Ed., Wisconsin State Teachers College, 1943; M.A., Iowa, 1947. Consumer credit as a phase of department store service policy. 1952. *Iowa.*

CHAO SHENG CHEN, M.A., Iowa, 1949. Impact of the break even point analyses. 1952. *Iowa.*

C. ROLAND CHRISTENSEN, B.A., Iowa, 1941; M.B.A., Harvard, 1943. Providing for succession of management in small companies. 1951. *Harvard.*

WILLIAM L. CLAFF, B.A., Harvard, 1939; M.B.A., 1941. Study of the administrative problems of a company operated group medical department free for employees and dependents. 1951. *Harvard.*

NEWEL W. COMISH, B.S., Oregon, 1946; M.B.A., Ohio State, 1948. Markdowns in department stores. 1952. *Ohio State.*

THOMAS P. CZUBIAK, B.A., Pennsylvania State, 1941; M.A., California (Los Angeles), 1946; M.B.A., Harvard, 1948. The cost aspects of quality control. 1951. *Harvard.*

KEITH DAVIS, B.B.A., Texas, 1935; M.B.A., 1941. Channels of executive communication. 1952. *Ohio State.*

DAVID W. DAY, B.E.E., Minnesota, 1946; M.A., Iowa, 1948. The mathematical determination of theoretical retail trading areas. 1951. *Iowa.*

WILLIAM F. DUNN, A.A., Springfield Jr. College, 1942; B.S., Illinois, 1947; M.S., 1949. The importance of working relationships in the effective administration of industrial engineering techniques. 1951. *Harvard.*

WILLIAM C. EMORY, B.S., Ohio State, 1947; M.B.A., 1948. Expense control in department stores. 1951. *Ohio State.*

ROBERT B. FETTER, B.S., Virginia Polytechnic Institute, 1947; M.B.A., Indiana, 1949. Levels and methods of compensation and incentives for industrial executives. 1952. *Indiana.*

ISADORE FINE, B.S., Rhode Island State, 1942; M.S., Columbia, 1947. Retail trade area measurement. 1952. *Columbia.*

EDWIN B. FLIPPO, B.S., Missouri, 1947; M.B.A., Ohio State, 1948. Analysis of methods of sustaining profit-sharing plans through profitless years. 1952. *Ohio State.*

William M. Fox, B.B.A., Michigan, 1947; M.B.A., 1949. Reaching agreement in groups under various types of leadership. 1952. *Ohio State.*

John F. L. Ghiardi, B.A., Sacred Heart Seminary, 1939; M.S., Catholic, 1942. Some analytical consideration of recent trends in profits of manufacturing corporations in the United States. 1953. *Catholic.*

Donald F. Goss, B.A., Michigan State, 1942; M.A., 1947. Social accounting: the use of a system of double-entry accounts for the presentation of aggregate data concerning the income and wealth of a national economy. *Michigan.*

William L. Haeberle, B.S., Indiana, 1943; M.S., 1947. A study of relations between motor car manufacturers and dealers. 1952. *Indiana.*

Cyril C. Herrmann, B.A., North Illinois State Teachers, 1942; M.B.A., Stanford, 1948. Problems of new enterprises—a case study. 1952. *Harvard.*

Friend R. Hoar, B.S., Northwestern, 1941; M.B.A., 1945; M.A., Harvard, 1948. Integration in marketing. 1952. *Harvard.*

Edwin R. Hodge, B.S., Indiana, 1938; M.B.A., Northwestern, 1939. Marketing of outboard motors. 1951. *Indiana.*

Stanley C. Hollander, B.S., New York, 1941; M.A., American, 1946. The one price system in American retailing and the extent and nature of variations therefrom. 1953. *Pennsylvania.*

Frederick E. Horn, B.S., Akron, 1933; M.S., Columbia, 1936. The recoupment theory of business income. 1952. *Columbia.*

Mary L. Ingbar, B.S., Radcliffe, 1946; M.A., 1948. The factors underlying the relationship between product cost and selling price: a case study. 1951. *Harvard.*

Charles E. Johnson, B.B.A., Minnesota, 1942; M.B.A., 1948. The concept and measurement of business income. 1952. *Minnesota.*

Simon Lopata, B.A., Brooklyn, 1938; M.A., 1940. Testing of commodities through actual uses; implications of such testing to the field of marketing. 1953. *Columbia.*

George E. Martin, B.S., Illinois, 1946; M.S., 1948. Locational factors as a competitive force in retailing. 1952. *Illinois.*

Philip R. Marvin, B.Ind.E., Rensselaer Polytechnic, 1937; M.B.A., Indiana, 1951. Criteria for top management application in the audit of industrial research administration. 1952. *Indiana.*

John E. Mertes, B.S., Oklahoma, 1935; M.S., New York, 1937. The impact of product and package design upon the marketing aspects of business. 1952. *Indiana.*

Carey P. Modlin, Jr., B.A., William and Mary, 1946; M.A., Princeton, 1948. Accounting practice and economic theory. 1952. *Princeton.*

David E. Moser, B.A., Willamette, 1935; M.S., Columbia, 1938. Manufacturer-dealer relations: a study of manufacturer assistance to retailers and its significance to the distributive function. 1953. *Columbia.*

Robert H. Myers, B.A., Kenyon, 1941; M.B.A., Indiana, 1948. A study of methods used to motivate salesmen. 1952. *Indiana.*

Powell Niland, B.S., Scranton, 1942; M.B.A., Harvard, 1948. The effect of federal taxes upon the form of transaction in the acquisition of one company by another. 1951. *Harvard.*

Emiel W. Owens, A study of consumers' acceptance of prepackaged produce and meats. 1952. *Ohio State.*

William S. Peters, B.A., Dartmouth, 1946; M.B.A., Pennsylvania, 1948. Factors influencing the location of retail trading establishments. 1952. *Pennsylvania.*

Philip H. Ragan, B.S., Wayne, 1947; M.A., Michigan State, 1949. The organization, management, and significance of industrial foundations in New England. 1951. *Harvard.*

Karl G. Rahdert, B.S., Indiana, 1942; M.B.A., 1948. Criteria for a raw materials inventory control program. 1952. *Indiana.*

Vincent G. Reuter, M.A., Iowa, 1949. Development of the unit load principle of materials handling: research, standardization, content, and cooperation. 1951. *Iowa.*

Stewart H. Rewoldt, B.B.A., Michigan, 1946; M.B.A., 1947. The economic effects of marketing research. 1951. *Michigan.*

JAMES S. SCHINDLER, B.S., Illinois, 1939; M.A., Washington, 1942; M.B.A., Michigan, 1942. Accounting problems of quasi reorganization. *Michigan.*

R. G. SEYMOUR, B.S., Idaho, 1936: M.S., Washington, 1947. Behavior of costs in marketing. 1952. *Illinois.*

D. L. SHAWVER, B.S., Eastern Illinois State, 1947; M.S., Illinois, 1948. Development of the theory of retail price determination. 1952. *Illinois.*

CHARLES C. SLATER, B.S., Northwestern, 1948. The economic growth and market behavior of the baking industry. 1952. *Northwestern.*

RICHARD L. SMITH, B.A., Utah, 1946; M.B.A., Northwestern, 1947. The influence of professional accounting opinion on management decisions. 1952. *Harvard.*

GLORIA P. SMYTHE, B.A., Vassar, 1945; M.A., Columbia, 1946. Resale price maintenance in the distribution of package liquor in New York State. 1952. *Columbia.*

THOMAS A. STAUDT, B.S., Indiana, 1942; M.B.A., 1948. The manufacturers' agent as a marketing institution—an economic analysis, 1929-48. 1951. *Indiana.*

ROBERT M. STRAHL, B.A., Muskingum, 1935; M.B.A., Ohio State, 1939. Executive training in department stores. 1951. *Ohio State.*

RALPH D. SWICK, B.S., Indiana, 1936; M.S., 1938. Uniform accounting methods of Indiana canning industry. 1952. *Indiana.*

PAUL A. VATTER, B.A., Holy Cross, 1944; M.A., Pennsylvania, 1947. Structure of retail trade by size of unit. 1952. *Pennsylvania.*

CHARLES W. VORIS, B.S., Southern California, 1947; M.B.A., 1948. A study of personnel management practices in the Northwest. 1951. *Ohio State.*

THOMSON M. WHITIN, B.A., Princeton, 1944; M.A., 1949. Inventory controls and stock levies. 1952. *Princeton.*

EDGAR G. WILLIAMS, B.A., Evansville, 1947; M.B.A., Indiana, 1948. The status of the professional personnel executive and his function in Indiana business. 1952. *Indiana.*

HENRY E. WRAPE, B.C.S., Notre Dame, 1938; M.B.A., Harvard, 1948. Management problems in programs for revising productivity standards under incentive wage plans. 1951. *Harvard.*

ELMER R. YOUNG, B.S., Utah, 1936; M.S., 1937. Some important distribution cost accounting theories and practices. 1952. *Columbia.*

Industrial Organization and Markets; Public Regulation of Business

Degrees Conferred

EDGAR S. BAGLEY, Ph.D., Iowa, 1950. The application of the federal antitrust laws to some aspects of market structure.

GUSTAV DREWS, Ph.D., New York, 1951. Patent rights in the national economy of the United States.

MAX A. GELLER, Ph.D., New York, 1951. The federal regulation of advertising.

HYMAN GOLDIN, Ph.D., Harvard, 1951. Domestic telegraph industry and the public interest: a study in public utility regulation.

ORRIS C. HERFINDAHL, Ph.D., Columbia, 1950. Concentration in the steel industry.

MARSHALL C. HOWARD, Ph.D., Cornell, 1951. Petroleum products marketing practices—a study in the relations between large and small business.

EDITH KAUFMAN, Ph.D., Clark, 1951. A history of the Worcester War Price and Rationing Board.

WILLIAM MARTIN, Ph.D., Harvard, 1951. Anti-trust acting against the Aluminum Company of America.

GUSTAV F. PAPANEK, Ph.D., Harvard, 1951. Food rationing in Britain, 1939-1945, with notes on continental rationing.

JOSEPH D. PHILLIPS, Ph.D., Columbia, 1951. Small enterprise and public policy.

EDWARD W. PROCTOR, Ph.D., Harvard, 1951. Anti-trust policy and the industrial explosives industry.

ROYAL H. RAY, Ph.D., Columbia, 1950. Concentration of ownership and control in the American daily newspaper industry.

ARCHIE E. RUSSELL, Ph.D., New York, 1950. The location of iron and steel production—F.O.B. The mill price system vs. the basing point system.

ALFRED L. SEELYE, D.C.S., Indiana, 1950. Fluid milk price control during World War II: OPA-Region 5.

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RUDOLPH JONES, B.A., Shaw, 1930; M.A., Catholic, 1947. The position of small business in the American economy. *Catholic.*

WARREN SHEARER, B.A., Wabash, 1936; M.A., Wisconsin, 1941; M.A., Harvard, 1949. Competition through merger. *Harvard.*

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THOMAS V. V. ATWATER, JR., B.A., Washington, 1947; M.A., 1948. M.A., Harvard, 1951. Postwar wage "rounds" and oligopolistic rationale. 1951. *Harvard.*

FRANK C. BAKER, M.B.A., Harvard, 1920. Public controls in the fluid milk industry. *New School for Social Research.*

HARRY L. BARRETT, B.A., Rochester, 1942; M.A., Harvard, 1950. Price output policy in gypsum industry. *Harvard.*

GEORGE D. BODENHORN, M.A., Chicago, 1948. Analysis of railroad regulation by the Inter-State Commerce Commission. 1951. *Chicago.*

ARNOLD H. DIAMOND, B.B.A., College of the City of New York, 1946; M.A., Columbia, 1947. The New York City Housing Authority; a study in public corporations. 1951. *Columbia.*

JOHN R. FELTON, B.A., California (Los Angeles), 1939; M.A., 1941. The dissolution of industrial combinations. 1952. *California* (Los Angeles).

MORRIS FORKOSCH, B.A., New York, 1936; M.A., 1938. The consumer aspect in anti-trust. *New School for Social Research.*

WILLIAM H. HARBAUGH, B.A., Alabama, 1942; M.A., Columbia, 1947. The preparedness movement in the United States, 1914-1916. 1952. *Northwestern.*

RIDGEWAY HOEGSTEDT, B.A., California, 1929; M.A., 1933. The relationship between inventoriable costs and selling prices of selected large industrial corporations, 1934-49. 1952. *Columbia.*

JOHN A. HOWARD, M.A., Harvard, 1948. The development of British monopoly policy. 1951. *Harvard.*

JANE KENNEDY, B.A., Texas, 1943. Factors influencing the development of firms in the oil industry. 1953. *Columbia.*

HARRY T. KOPLIN, B.A., Oberlin, 1947. Certification criteria under the Natural Gas Act. 1951. *Cornell.*

JOHN M. LISHAN, B.A., Pennsylvania State, 1941; M.A., California (Los Angeles), 1947; M.A., Harvard, 1951. The Sherman Act. 1951. *Harvard.*

JOHN S. MCGEE, B.A., Texas, 1947. The Robinson-Patman Act: its philosophy and interpretation. 1952. *Vanderbilt.*

JAMES MCKIE, B.A., Texas, 1943; M.A., 1947; M.A., Harvard, 1949. Bilateral oligopoly in industrial product markets. 1951. *Harvard.*

THOMAS J. MCNICHOLS, B.S., Texas Christian, 1947; M.B.A., 1948. Analysis of corporate growth and concentration in selected industries. 1951. *Northwestern.*

NORMAN W. NELSON, B.A., Tufts, 1948; M.A., Fletcher School, 1950. Subsidies to producers as a substitute for tariffs. 1952. *Fletcher School of Law and Diplomacy.*

WILLIAM C. NOLAN, B.S., New Mexico State Teachers College, 1946; M.A., New Mexico, 1948. Organization for the regulation of trade—the Federal Trade Commission from Humphrey to the basing point decisions. 1952. *New York.*

DICKSON RECK, B.S., Illinois, 1927. Federal government purchasing: the effect of purchasing policy on prices and products. 1951. *Columbia.*

EDWARD A. ROBINSON, B.A., St. Mary University, 1944; M.A., Catholic, 1947. Federal incorporation: a study of the proposals for requiring federal charters for corporations engaged in interstate commerce. 1953. *Catholic.*

GIDEON ROSENBLUTH, B.A., Toronto, 1943. Industrial concentration in post-war Canada. 1952. *Columbia.*
JOHN B. SHEAHAN, B.A., Stanford, 1948; M.A., Harvard, 1951. Competition vs. regulation as a policy aim for the telephone. 1952. *Harvard.*
GORDON SHILLINGLAW, B.A., Brown, 1945; M.S., Rochester, 1948. Requirements contracts and the suppression of competition. 1952. *Harvard.*
RUBIN SIMKIN, B.A., Manitoba, 1947; M.A., Toronto, 1948. Government investment in natural monopolies—a case study. 1952. *Chicago.*
JAMES R. SIMPSON, B.A., Princeton, 1941; M.A., Harvard, 1949. Integration in the textile industry. 1951. *Harvard.*
EDGAR A. TOPPIN, B.A., Howard, 1949; M.A., 1950. A study of the defenders and defense of big business from 1900 to 1917. 1953. *Northwesetern.*
RICHARD A. TYBOUT, M.A., Michigan, 1949. Control of atomic energy. *Michigan.*
JAMES M. WALLER, B.A., Vanderbilt, 1922; M.A., 1927; LL.B., Yale, 1924. An evaluation of our national policy on close combinations. 1952. *North Carolina.*
JARED S. WEND, M.A., Michigan, 1947. Federal control of the dairy industry. 1952. *Michigan.*

Public Utilities; Transportation; Communications

Degrees Conferred

ESTHER J. DUDGEON, D.C.S., Indiana, 1951. Intercity motor carrier transportation.
HENRY W. HEWETSON, Ph.D., Chicago, 1951. The distance principle in railway freight rates, with particular reference to Canada.
FREDERIC P. MORRISSEY, Ph.D., Columbia, 1951. Economic study of the Ontario Hydro-Electric Power Commission.
JAMES P. PAYNE, JR., Ph.D., Illinois, 1951. Some economic aspects of U.S. international air carrier operations.
SAMUEL B. RICHMOND, Ph.D., Columbia, 1951. State-wide telephone rates.
ROY J. SAMPSON, Ph.D., California, 1951. The relationship between railroad freight rates and the domestic distribution of southern pine and Douglas fir lumber.
JAMES H. STEWART, Ph.D., Kentucky, 1951. Financial history of the Kentucky Utilities Company.

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EARL C. THIBODEAUX, B.S., Louisiaina State, 1941. The New Orleans-Houston port rivalry. *Columbia.*
ERNEST W. WILLIAMS, JR., B.S., Columbia, 1938; M.S., 1939. The regulation of rail-motor rate competition by the Interstate Commerce Commission. *Columbia.*

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ROBERT L. ALLEN, B.A., Redlands, 1947; M.A., Harvard, 1950. The influence of power on industrial location. 1951. *Harvard.*
ESTHER R. BACKER, B.A., Radcliffe, 1941; M.A., 1945. Economics of urban transportation 1952. *Harvard.*
MILTON S. BAUM, B.S., California (Los Angeles), 1939; M.B.A., Pennsylvania, 1940. The economics and regulation of air freight. 1952. *Southern California.*
HARVEY C. BUNKE, B.S., Illinois, 1947; M.S., 1949. Air mail payments to scheduled air carriers. 1951. *Illinois.*
EDWARD M. CAINE, B.B.A., College of the City of New York, 1940; M.P.A., New York 1947. The regulation of commercial aviation under the Civil Aeronautics Act of 1938 1952. *New York.*
JOHN S. DAVENPORT, M.S., Illinois, 1947. The utility of circulation aggregates to newspaper management as shown in a quantitative evaluation of the circulation policies of the Register and Tribune Publishing Company, 1909-1950. *Iowa.*

William R. Dieckman, M.A., Michigan, 1947. Rate regulation in the air transport industry. 1952. *Michigan.*

Robert S. Einzig, M.A., Michigan, 1949. Competition in the air-transport industry: a case study in public control. 1952. *Michigan.*

Michael Gort, B.A., Brooklyn, 1943; M.A., Columbia, 1951. The planning of investment: a study of capital budgeting in the electric power industry. 1952. *Columbia.*

Ralph C. Heath, B.A., Princeton, 1931; M.B.A., Indiana, 1948. The development of pipe lines in the United States. 1952. *Indiana.*

Richard Hellman, B.A., Columbia, 1934. Government competition in public utilities. 1952. *Columbia.*

Roy E. Huffman, B.S., Montana State, 1938; M.S., Maryland, 1939. Economics of irrigation development and public water policy. 1952. *Wisconsin.*

Edwin Hughes, B.A., Williams, 1919; M.A., 1934. The St. Paul reorganization. 1953. *Columbia.*

Herbert E. Johnson, B.Ed., Southern Illinois, 1939; M.S., 1947. Pricing policies in the natural gas industry. 1951. *Illinois.*

William B. Keeling, B.B.A., Texas, 1946; M.A., 1949. The enforcement of the Public Utility Holding Act of 1935. 1952. *Texas.*

James H. Lemley, B.A., Mississippi, 1936; M.A., 1948. Development of the Gulf, Mobile and Ohio Railroad Company. 1952. *Indiana.*

Harvey J. Levin, B.A., Hamilton, 1944; M.A., Columbia, 1948. Cross channel ownership of mass media: a study in social evaluation. 1952. *Columbia.*

Merton H. Miller, B.A., Harvard, 1943. Discrimination in railroad rates. 1952. *Johns Hopkins.*

Edward J. Neuner, Jr., B.A., Brooklyn, 1944; M.A., Wisconsin, 1945. State and federal regulation of natural gas industry. 1953. *Columbia.*

James A. Snitzler, B.A., Washington, 1943; M.B.A., Columbia, 1949. A study of the pricing policies of the Bonneville Power Administration: their theory, structure and effects. 1952. *Columbia.*

Horace Townsend, Jr., M.A., Pennsylvania, 1939. Long-term problems in the coastwise and inter coastal shipping industry. 1952. *Pennsylvania.*

Leland S. Van Scoyoc, B.S., Kansas State, 1926; M.S., 1935. History of the development and economic importance of the Chicago, Indianapolis and Louisville R.R. 1952. *Indiana.*

William Weiner, B.A., Texas, 1939; M.A., 1946. A study of the Hope Natural Gas Company—its historical background and economic significance. 1952. *Columbia.*

Theodore L. Whitesel, B.Ed., Charleston Teacher's College, 1931; B.S., Illinois, 1932; M.S., 1933. Joint federal-state jurisdiction in the regulation of interstate public utilities corporation. 1951. *Illinois.*

John G. Yenchar, B.A., Princeton, 1925; M.A., 1926. Federal airline regulation, 1926-1951. 1953. *Columbia.*

William M. Zentz, M.A., Michigan, 1947. Simplification and integration of public utility holding companies. 1952. *Michigan.*

Industry Studies

Degrees Conferred

Guy Black, Ph.D., Chicago, 1951. Market controls in the California grape industry: an evaluation.

J. Howard Craven, Ph.D., Harvard, 1951. Structure and functioning of the U.S. wool industry.

Harry M. Dixon, Ph.D., Illinois, 1951. The Illinois coal mining industry.

William A. Hayes, Ph.D., Catholic, 1951. The hotel industry in the American economy.

Donald R. Hodgman, Ph.D., Harvard, 1951. New production index for Soviet industry.

Martha C. Howard, Ph.D., Columbia, 1951. History of the margarine industry.

Frederick T. Moore, Ph.D., California, 1951. Industry organization in non-ferrous metals.

JAMES A. MORRIS, Ph.D., Harvard, 1951. Woolen and worsted industry in the southern Piedmont states.

WALLACE B. NELSON, Ph.D., Iowa, 1950. The oil industry: a case study in imperfect competition.

LLOYD B. SAVILLE, Ph.D., Columbia, 1940. Price determination in the gray-iron foundry industry.

CARL M. STEVENS, Ph.D., Harvard, 1951. Problem of the household industry in input-output studies.

HERBERT STRINER, Ph.D., Syracuse, 1951. An analysis of the bituminous coal industry in terms of total energy supply and a synthetic oil program.

Theses in Preparation

ROBERT R. AURAY, B.A., Georgetown, 1947; M.A., 1949. Production functions for a malleable casting firm. 1952. *Columbia.*

FREDERICK E. BALDERSTON, B.A., Cornell, 1948; M.A., Princeton, 1950. Vertical integration in the housing industry. 1952. *Princeton.*

VICTOR J. BARAN, B.S., Georgia Tech, 1942; B.S., 1946; M.S., 1949. Economic factors influencing the location and growth of the chemical industry. *Virginia.*

HARRY R. BRADLEY, B.A., California (Los Angeles), 1948. The aluminum industry in a defense economy. 1953. *Columbia.*

MAURICE L. BRANCH, B.A., Michigan State, 1946; M.A., 1947. Some economic aspects of the paper and pulp industry. 1952. *Wisconsin.*

ROBERT E. CARMODY, B.S., St. Louis, 1943; M.S., 1948. The economic theory of demand in the Firestone Tire and Rubber Company's price quality study. 1952. *St. Louis.*

PAUL R. CAWTHROP, B.A., Marietta, 1946; M.A., Columbia, 1948. The development of the salt, petroleum and chemical industries in the Upper Ohio Valley. 1953. *Columbia.*

ROBERT H. COLE, B.S., Illinois, 1939; M.S., 1940. Some marketing aspects of vertical integration in the Southeastern textile industry. 1952. *North Carolina.*

PAUL W. COOK, JR., B.A., Brown, 1948. The economic basis and effect of the development of synthetic liquid fuel processes. 1951. *Chicago.*

CHARLES R. DEAN, B.S., Harvard, 1945. Economic aspects of the legitimate theater. 1952. *Columbia.*

EDGAR O. EDWARDS, B.A., Washington and Jefferson, 1947; M.A., Johns Hopkins, 1949. Expansion in the chemical industry in the United States. 1951. *Johns Hopkins.*

ALFRED O. GINKEL, B.A., Rochester, 1944; M.S., 1946. Invention and innovation in the graphic arts industry, 1930-1950. 1951. *Massachusetts Institute of Technology.*

ADA M. HARRISON, B.A., State College of Washington, 1941; M.A., Radcliffe, 1949. An economic analysis of the furniture industry. 1951. *Harvard.*

J. RICHARD POWELL, B.A., Santa Barbara State College, 1938; M.A., California (Los Angeles), 1939. The Mexican petroleum industry since expropriation. 1951. *California (Los Angeles).*

MARTIN M. PSATY, B.A., California, 1939. Output and productivity in building construction. 1952. *New York.*

RICHARD E. RIDGWAY, LL.B., Jefferson, 1936; B.B.A., Texas, 1946; M.B.A., 1947. The manufacture and marketing of Arkansas-made furniture. 1951. *Ohio State.*

VERNON W. RUTTAN, B.A., Yale, 1948; M.A., Chicago, 1950. Technological progress in the meat packing industry. 1951. *Chicago.*

RICHARD SCHEUCH, B.A., Princeton, 1942; M.A., 1948. The building trades unions and the cost of housing. 1952. *Princeton.*

STANLEY SCHOR, B.A., Pennsylvania, 1943; M.A., 1950. Ratio of capital to product in manufacturing by size of plant. 1952. *Pennsylvania.*

GERTRUDE SCHROEDER, B.A., Colorado State College of Education, 1940; M.A., Johns Hopkins, 1948. The growth of the business unit in the iron and steel industry. 1951. *Johns Hopkins.*

JOHN R. SUMMERFIELD, B.S., Massachusetts Institute of Technology, 1938; M.B.A., Cali-

fornia, 1947. The economic effects of the development of automatic process controls in American industry. 1952. *California.*

GEORGE S. TOLLEY, B.A., American, 1947; M.A., Chicago, 1950. Economic efficiency in the meat packing industry. 1951. *Chicago.*

MARCUS VOSK, B.S., College of the City of New York, 1929; M.A., Columbia, 1931. A contribution to the history of the machine industry. *New School for Social Research.*

HAROLD L. WATTEL, B.A., Queens, 1942; M.A., Columbia, 1947. The whiskey industry. *New School for Social Research.*

GEORGE W. WRIGHT, B.A., Kent State, 1948; M.A., Harvard, 1950. Industrial location theory and economic development. 1952. *Harvard.*

Land Economics; Agricultural Economics; Economic Geography

Degrees Conferred

GERALD R. ABBENHAUS, Ph.D., Illinois, 1951. Locational changes in the food processing industries between 1939 and 1947.

RESAT M. AKTAN, Ph.D., California, 1950. Agricultural policy of Turkey, with special emphasis on land tenure.

VANCE I. ALVIS, Ph.D., Virginia, 1951. The interstate economic relationships of Arkansas: prewar and postwar.

RICHARD B. ANDREWS, Ph.D., Wisconsin, 1951. An examination of the post-war adjustments, trends, and problems in the Madison, Wisconsin, housing market.

KENNETH BACHMAN, Ph.D., Harvard, 1951. Chapters on farm size, with special emphasis on low production farming units.

EMER E. BROADBENT, Ph.D., Illinois, 1950. The demand for quality eggs in the Chicago retail trade.

OWEN L. BROUGH, Ph.D., Iowa State (Ames), 1950. Economics of marketing hogs by carcass weight and grade.

SAMUEL L. BROWN, Ph.D., Georgetown, 1951. The elasticity of demand of housing.

DALE E. BUTZ, Ph.D., Minnesota, 1950. An economic analysis of the Minnesota dry milk industry.

FRED E. CASE, D.C.S., Indiana, 1951. Federal budgetary commitments for housing 1930-1951—implications.

DAVID A. CLARKE, JR., Ph.D., California, 1951. Costs, pricing, and conservation in wholesale milk delivery in Los Angeles.

WARREN E. COLLINS, Ph.D., Illinois, 1950. Methodology in the measurement of fluid milk consumption and factors affecting demand.

ROBERT L. CLODIUS, Ph.D., California, 1950. An analysis of statutory marketing control programs in the California-Arizona orange industry.

JOHN H. CUMBERLAND, Ph.D., Harvard, 1951. Locational structure of the East Coast steel industry.

LESLIE E. DRAYTON, Ph.D., Wisconsin, 1951. Marketing fruits and vegetables in southeastern Wisconsin.

MAHMOUND A. EL-SHAFIE, Ph.D., Wisconsin, 1951. Population pressure on land and the problem of capital accumulation in Egypt.

GLENN W. FREEMYER, Ph.D., Illinois, 1950. History and an economic analysis of milk supply problems in the St. Louis marketing area, 1910-1949.

JOHN C. FREY, Ph.D., Iowa State (Ames), 1951. Some obstacles to recommended land use practices in western Iowa and means for overcoming them.

ERNEST M. GOULD, JR., Ph.D., Harvard, 1951. Economic problems of managing small woodland holdings in New England.

EDGAR HAFF, Ph.D., Harvard, 1951. Federal-state-local relations in agriculture, a general survey.

HANS G. HIRSCH, Ph.D., Minnesota, 1950. The role of cooperatives in the federal milk marketing scheme.

HARALD R. JENSEN, Ph.D., Iowa State (Ames), 1950. Economics of crop rotations.

MANLEY H. JONES, D.C.S., Harvard, 1950. Problems of the soybean industry.

RANDOLPH G. KINABREW, Ph.D., Louisiana State, 1950. Tung oil: an economic analysis.

RICHARD KING, Ph.D., Harvard, 1951. Location of agriculture production theory and application to the poultry meat industry of eastern Connecticut.

GERALD KORZAN, Ph.D., Minnesota, 1951. Marketing dairy products in sparsely populated regions with special reference to Montana.

ALDEN C. MANCHESTER, Ph.D., Harvard, 1951. Price-making in the Boston egg market.

STEPHEN L. MCDONALD, Ph.D., Texas, 1951. Future agricultural policy with a view to an integrated economy.

JOE R. MOTHERAL, Ph.D., Wisconsin, 1951. Progress of land tenure adjustments in a family farm area of Texas.

OTTAR NERVIK, Ph.D., Harvard, 1951. Chain store selling and buying.

KENNETH E. OGREN, Ph.D., Minnesota, 1951. An analysis of consumer demand for fresh citrus fruits, frozen concentrated orange juice, and selected canned fruit juices.

JACOB OSER, Ph.D., Columbia, 1950. Government price policy in agriculture.

WILLIAM N. PARKER, Ph.D., Harvard, 1951. Fuel supply and industrial strength.

PERRY F. PHILIPP, Ph.D., California, 1951. An economic analysis of the diversified agriculture of Hawaii.

ADDISON D. REED, Ph.D., California, 1951. Improving California poultry management.

SHERMAN T. RICE, Ph.D., Illinois, 1950. Interregional competition in the commercial broiler industry.

HENRY M. M. RICHARDS, Ph.D., New York, 1951. Attempts by the federal government to support agricultural prices.

FRED SCHRADER, Ph.D., Illinois, 1951. The demand for meat in Canada.

THEODORE SIELAFF, Ph.D., Minnesota, 1951. An economic study of rural electrification in Minnesota.

EARL R. SWANSON, Ph.D., Iowa State (Ames), 1951. Agricultural resource productivity and attitudes toward the use of credit in southern Iowa.

VINCENT I. WEST, Ph.D., Illinois, 1951. Evaluation of certain systems for differentiating market qualities of soybeans.

ALEX SWANTZ, Ph.D., Minnesota, 1951. Economic effects of government regulations of fluid milk market with special reference to the Minneapolis-St. Paul market.

FREDERICK R. TAYLOR, Ph.D., Minnesota, 1951. An economic analysis of quality deterioration in Minnesota eggs.

J. ROBERT TOMPKIN, Ph.D., Iowa State (Ames), 1950. Evaluation of the production and subsistence loan program in Iowa.

RAYMOND F. WALLACE, Ph.D., Northwestern, 1951. The economic background and managerial decisions in the location of industrial plants in Mississippi under the Balance Agriculture with Industry Program.

DONALD B. WILLIAMS, Ph.D., Illinois, 1950. The application of the economic theory of the firm to farm management research with special reference to recent advances in dynamic economics.

FRANCIS S. YEAGER, Ph.D., Minnesota 1951. The metropolitan twin cities, a regional entrepot—an economic analysis and interpretation of the upper midwest.

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GERTRUDE NATUSCH, B.A., Mt. Holyoke, 1941; M.A., Radcliffe, 1945. Planning family food budgets for improved nutrition. *Harvard.*

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V. NORMAN ALBRECHT, B.S., Maryland, 1944; M.A., 1945. Consumption of agricultural production in the United States. *Harvard.*

WALTON J. ANDERSON, B.S., Saskatchewan, 1942; M.S., 1944. The economic efficiency of British Columbian agriculture. 1951. *Chicago.*

CHESTER B. BAKER, B.S., Iowa State (Ames), 1946; M.S., 1948. Government participation in agricultural credit. *California.*

ELMER F. BAUMER, M.S., Ohio State, 1947. Formulas for pricing of milk to producers in Ohio. 1951. *Ohio State.*

SHERWOOD O. BERG, B.S., South Dakota State College, 1947; M.S., Cornell, 1948. An economic analysis of agricultural production credit in Minnesota. 1951. *Minnesota.*

CHARLES E. BISHOP, B.S., Berea, 1946; M.S., Kentucky, 1947. Off-farm employment as a means of improving family opportunities in agriculture. 1952. *Chicago.*

H. WAYNE BITTING, B.S., Illinois, 1933; M.S., Iowa State (Ames), 1937. Problems in measuring and analyzing marketing margins for selected fruits and vegetables. 1951. *Minesota.*

GEORGE F. BLOOM, B.S., Indiana, 1941; M.B.A., 1948. The appraisal plant of information. 1952. *Indiana.*

TED R. BRANNEN, B.S., Arkansas, 1944; M.S., 1947. The surplus problem in agriculture. 1951. *Texas.*

ARNOLD BREKKE, B.S., Minnesota, 1942. Development of agricultural policy. 1951. *Minnesota.*

JOHN T. BUCK, B.S., Western Kentucky State, 1938; M.S., Kentucky, 1947. An economic analysis of the shift from cream to whole milk in Minnesota cooperative creameries. 1951. *Minnesota.*

WILBUR D. BUDDEMEIER, B.S., Illinois, 1933; M.S., 1941. Economic problems of forage production and utilization on Illinois farms. 1952. *Illinois.*

DOUGLAS D. CATON, B.S., Wisconsin, 1948; M.S., 1949. Trends in prices, production, processing and distribution of canning peas and sweet corn in Wisconsin. 1952. *Wisconsin.*

GORDON J. CHAPMAN, B.S., Missouri, 1947; M.A., 1948. The marketing of prefabricated homes in the Midwest. 1952. *Indiana.*

JAMES H. CLARKE, B.S., Kentucky, 1935; M.S., 1937. Some economic aspects of fluid milk marketing in West Virginia. 1952. *Minnesota.*

EDWIN J. COHN, JR., B.A., Harvard, 1942. Regional location of industry in the Pacific Northwest. 1952. *Columbia.*

PHILIP E. COLDWELL, B.S., Illinois, 1946; M.S., 1947. Some aspects of the Columbia and Missouri River projects. 1952. *Wisconsin.*

REX F. DALY, B.S., Utah State, 1938; M.S., Maryland, 1939. An analysis of prospective demand outlets and market outlets for the products of western agriculture. 1952. *Illinois.*

KINCHLOE C. DAVIS, M.S., Oklahoma A. & M., 1941. The farm lease influence on farm organization and tenure stability. 1953. *Wisconsin.*

LEE M. DAY, B.S., Iowa State (Ames), 1947; M.S., 1948. An economic analysis of leasing arrangements. 1951. *Minnesota.*

WILLIAM M. DRUMMOND, B.A., Queen's, 1923; M.A., Toronto, 1924; M.A., Harvard, 1951. Economics of the Canadian dairy industry. 1952. *Harvard.*

EDGAR S. DUNN, JR., B.S.B.A., Florida, 1943; M.A., 1948; M.A., Harvard, 1950. The solution of land use patterns in agriculture. 1951. *Harvard.*

CARLOS C. ERWIN, B.A., Murray (Kentucky), 1939; M.S., Illinois, 1948. Analysis of some interregional economic problems in the marketing of agricultural products. 1952. *Illinois.*

MERRILL B. EVANS, M.S., Ohio State, 1948. Some of the physical and quality factors to be considered in an improved system of buying and selling hogs. 1951. *Ohio State.*

WILLIAM A. FAUGHT, B.S., Arkansas, 1940; M.A., Virginia, 1942. The development of the one-variety cotton program. 1952. *Virginia.*

W. LYLE FITZGERALD, B.S., Missouri, 1947; M.A., 1949. Problems in assembling, processing, and distributing hogs and pork products. 1952. *Illinois.*

W. JAMES FOREMAN, B.S., Arkansas, 1947; M.S., Illinois, 1949. Regional economic development with special reference to the location of plants in the food industries. 1952. *Illinois.*

WILLIAM A. FRANK, B.S., Pennsylvania, 1943; M.A., Chicago, 1949. Gains and costs involved in reducing seasonal and annual variability of hog supplies. 1952. *Chicago.*

ELSAYED GABALLAH, B.S., Fouad I University (Egypt), 1938; M.S., 1945. An economic analysis of the price approach to agricultural stabilization. 1952. *Wisconsin.*

LOWELL N. GEORGE, B.S., Warrensburg (Missouri) Teachers, 1930; M.A., George Peabody

College, 1939. An historical analysis of agricultural cooperation in twelve selected counties of southeastern Ohio. 1952. *Illinois.*

RAY A. GOLDBERG, B.A., Harvard, 1948; M.B.A., 1950. The hedging of grain: its effect on the American economy. 1952. *Minensota.*

FRANK D. HANSING, B.S., Illinois, 1941; M.S., 1947. Factors influencing changes in the ownership and size of farm land holdings. 1952. *Illinois.*

JAMES W. HANSON, B.S.C., Nebraska; M.A. The influence of the FHA on the competitive structure of the Boston home mortgage market. 1952. *Massachusetts Institute of Technology.*

ROBERT O. HARVEY, B.S., Indiana, 1947; M.B.A., 1949. Financing of construction of single family dwelling units. 1951. *Indiana.*

LAWRENCE W. HAYNES, B.S., Purdue, 1936. An analysis of the ice cream industry as an outlet for dairy products. 1952. *Wisconsin.*

WILLIAM E. HENDRIX, B.S., Tennessee, 1935; M.S., 1936. Capital productivity and accumulation in agriculture in the Piedmont of Georgia. 1951. *Wisconsin.*

JIMMYE S. HILLMAN, B.S., Mississippi State, 1942; M.S., Texas A. & M., 1946. Barriers to interstate trade in agricultural products. *California.*

GEOFFREY A. HISCOCKS, B.Sc., Reading, 1946; M.S., Illinois, 1951. The implications of farmers' motivations in farm business analysis. 1952. *Illinois.*

WILLIAM S. HOOGNALE, B.S., Virginia, 1947; M.A., 1948. Markets and prices for Florida fresh oranges. 1951. *Virginia.*

LEO M. HOOVER, B.S., Kansas State, 1940; M.S., Iowa State, 1942. Capital and labor substitution on farms in the plain area of Kansas. 1952. *Harvard.*

MELVIN R. JANSSEN, B.S., Illinois, 1943; M.P.A., Harvard, 1948; M.S., Illinois, 1948; M.A., Harvard, 1949. Labor and capital substitution on farms in cash grain areas of corn belt. 1951. *Harvard.*

MATTHEWS M. JOHNSON, B.S., 1936; M.A., 1939. The Philadelphia mortgage market. 1951. *Pennsylvania.*

RICHARD C. KAO, Macro-economic studies in agricultural production and price policies. 1952. *Illinois.*

SAUL M. KATZ, B.S., Cornell; M.S., M.P.A., Harvard; M.A. Agricultural policy in relation to western hemisphere agricultural programs.

WILLIAM N. KINNARD, JR., B.A., Swarthmore, 1947; M.B.A., Pennsylvania, 1949. The impact of real estate finance on monetary and fiscal policy. 1952. *Pennsylvania.*

DALE A. KNIGHT, B.S., Kansas State College, 1945; M.S., Cornell, 1946; M.A., Chicago, 1948. Anti-complementary relations among and within agricultural enterprises. 1952. *Chicago.*

JOHN M. KUHLMAN, B.A., Washington State, 1948; M.S., Wisconsin, 1949. Regional planning in the upper Wisconsin river valley. 1952. *Wisconsin.*

L. JOHN KUTISH, B.S., Iowa State (Ames), 1943. Marketing of feed molasses. 1952. *Wisconsin.*

LUIGI M. LAURENTI, B.A., California, 1948. The effects of minority group occupancy on real property values in San Francisco and Berkeley, California. 1952. *California.*

CHARLES E. LEE, B.A., Saskatchewan, 1930; B.S., 1931. Economic effects of sanitary regulations relating to milk markets. 1952. *Minnesota.*

JACK LESSINGER, B.S., California, 1943. An analysis of the history of land use on the Day Valley Ranch, Aptos, California, 1868 to 1950. *California.*

JOHN K. LEWIS, B.A., Chicago, 1935; M.A., Nebraska, 1937. Returns to productive factors and resource allocation with special reference to agriculture. 1951. *Chicago.*

CLAYTON P. LIBEAU, B.S., Maryland, 1941; M.S., Wisconsin, 1948. Commercial movement of field seeds, 1952. *Wisconsin.*

FRANK H. MAIER, B.A., Valparaiso, 1940; M.B.A., Chicago, 1941; M.A., 1949. Effects of farm leasing arrangements on resource allocation. 1952. *Chicago.*

JOE A. MARTIN, B.S., Clemson, 1946; M.S., 1948. Land use adjustments in the Tennessee Valley. 1952. *Minnesota.*

CHESTER O. MCCORKLE, JR., B.S., California, 1947; M.S., 1948. Economics of scale in cotton and potato farming—Southern San Joaquin Valley. *California.*

WILLIAM E. MCDANIEL, B.S., Missouri, 1942; M.S., Illinois, 1943. Equitable farm leases. 1951. *Minnesota.*

CHRISTIANA MCFADYEN, B.A., North Carolina, 1936; M.A., Columbia, 1938. The history of the American Farm Bureau Federation. 1952. *Chicago.*

ALEXANDER MELAMID, B.S.Sc., London School of Economics, 1937; Post Graduate Diploma, 1939. The location of petroleum refineries. *New School for Social Research.*

TROY MULLINS, B.S.A., Arkansas, 1934; M.S., Wisconsin, 1938. Economics of mechanization of rice production in Louisiana. 1953. *Wisconsin.*

JOHN C. MURDOCK, B.S., Oaklahoma, 1947. The economics of petroleum conservation. 1952. *Wisconsin.*

P. V. SIVARAMA MURTHY, M.A., Madras, 1944. War and Indian agriculture, 1937-1947. 1952. *Columbia.*

HERMAN L. MYERS, B.S., Connecticut, 1940; M.P.A., Harvard, 1947; M.A., 1949. Economic analysis of technological developments in the marketing and processing of food products, 1930-1950. 1951. *Harvard.*

THADDEUS J. OBAL, B.S., Illinois, 1948; M.S., 1949. Integrating national agricultural and fiscal-monetary policies. 1951. *Illinois.*

ROBERT E. OLSON, B.S., Gustavus Adolphus, 1943; M.S., Minnesota, 1948. Some economic aspects of artificial insemination of dairy cattle. 1951. *Minnesota.*

EVERETT E. PETERSON, B.S., Montana State, 1939; M.S., 1943; M.A., Chicago, 1950. Production adjustments to the base-excess plan of milk pricing in the Detroit milkshed. 1952. *Chicago.*

EWART P. REID, B.A., McGill, 1931; M.A., 1932. Transportation as a factor affecting Canadian agriculture. 1952. *Wisconsin.*

FRANKLIN J. REISS, B.S., Illinois, 1940; M.S., 1942. Individual differences in farm managerial ability. 1951. *Illinois.*

KENNETH L. ROBINSON, B.S., Oregon State, 1942; M.S., Cornell, 1948. A study of fluid milk margins in northeastern markets. 1951. *Harvard.*

WALDO S. ROWAN, B.S., Georgia, 1940; M.S., Tennessee, 1941. Marketing seasonal surplus milk in deficit producing areas. 1952. *Wisconsin.*

ROBERT W. RUDD, B.S., Kentucky, 1939. An analysis of feeder pig prices, with special reference to Kentucky livestock auctions. *California.*

LESTER C. SARTORIUS, B.B.A., Minnesota, 1941; M.A., 1949. Food consumption through Minneapolis eating places. 1951. *Minnesota.*

WILLARD D. SCHUTZ, B.S., Wisconsin, 1940; M.S., Montana State, 1947. An appraisal of cost benefit analysis as a basis for determining public expenditures in land development. 1952. *Wisconsin.*

FRANK S. SCOTT, JR., B.S., Oregon State 1944; M.A., Missouri, 1947. Economic aspects of multiple-purpose river development with particular emphasis on irrigation. 1952. *Illinois.*

STANLEY K. SEAVER, B.S., Minnesota, 1940; M.S., Connecticut, 1942. The effect of variability in supply of eggs upon wholesale marketing costs. 1951. *Chicago.*

JAMES A. SHUTE, B.S., Pennsylvania State, 1942; M.S., 1947. Dairy chore requirements with loose housing. 1951. *Minnesota.*

CECIL N. SMITH, B.S., Virginia Polytechnic Institute, 1941; M.A., Virginia, 1947. An economic analysis of the eastern seaboard apple industry. *California.*

EDWARD J. SMITH, B.S., Pennsylvania State, 1936. Economics of making and utilizing grass silage. 1951. *Wisconsin.*

RAYMOND C. SMITH, B.S., Missouri, 1949; M.S., Illinois, 1950. Economic aspects of the Illinois hatchery industry. 1952. *Illinois.*

JOHN SNARE, B.S.A., Georgia, 1948; M.S.A., 1949. A study of personal resources and characteristics as they affect systems of farm tenancy. 1952. *Minnesota.*

VERNON SORENSON, B.A.B.A., Minnesota, 1948; A study of vertical integration among cooperative dairy marketing associations. 1952. *Minnesota.*

ROBERT G. F. SPITZE, B.S.A. Arkansas, 1947. Methodological issues in the analysis of agricultural policy. 1952. *Wisconsin.*

CARL H. STOLTENBERG, B.S., California, 1948; M.F., 1949. Tax delinquency and land

ownership and management policies in forest areas of northern Minnesota. 1952. *Minnesota.*

JAMES H. STREET, B.A., Texas, 1940. Recent technological developments in American cotton production and their social effects. 1952. *Pennsylvania.*

H. R. STUCKY, B.S., Idaho, 1927; M.S., Minnesota, 1942. Settlement and repayment policies on irrigation projects. 1952. *Minnesota.*

GEORGE P. SUMMERS, B.S., Kentucky, 1928; M.S., 1932. An economic study of the price support and control program for burley tobacco. 1952. *Minnesota.*

FRANCIS G. THOMASON, B.A., Virginia, 1942; M.A. 1947. A study of relationships between two types of agricultural commodities; sugar and corn sweeteners. 1953. *Virginia.*

WILLIAM N. THOMPSON, B.S., Illinois, 1941; M.S., 1942. Systems of farming for highly productive land. 1952. *Illinois.*

PAUL TODD, JR., B.S. Cornell, 1942. An analysis of the effect of economic factors upon nutritional intake patterns, and the application of these effects to the evaluation of food disposal programs. 1951. *Chicago.*

CLARENCE E. TROTTER, B.S., Pennsylvania State, 1938. A study of custom candling and cartoning of eggs at four Pennsylvania cooperatives with particular reference to cost factors. 1952. *Minnesota.*

EDWARD H. WARD, B.S., Wisconsin, 1946. Economics of dairy marketing. 1952. *Wisconsin.*

CLINTON L. WARNE, B.A., Colorado, 1947; M.A., Clark, 1948. Some aspects of the impact of the passenger automobile upon the economy of Nebraska. 1952. *Nebraska.*

ARTHUR E. WARNER, B.S., Indiana, 1949; M.B.A., 1950. Financing the construction of prefabricated homes in the Middle West. 1952. *Indiana.*

NORMAN WEINBERG, B.A., Western Reserve, 1947; M.A., Columbia, 1949. The external trade of Maryland. 1952. *Columbia.*

MARION N. WILLIAMSON, JR., B.S., Texas A. & M., I.A., Harvard. Effect of improved technologies on physical input-output relations and farm income on farms in the high plains area of Texas. 1952. *Harvard.*

WALTER J. WILLS, B.S., Illinois, 1936; M.S., 1937. Marketing livestock in southern Illinois. 1952. *Illinois.*

EGON P. WINTER, B.S., Iowa State 1942; M.S., Colorado State, 1944. Reappraisal of waste, a conceptual and statistical analysis. 1953. *Wisconsin.*

NORMAN ZELLNER, B.S., California, 1947. An economic analysis of the California prune industry. *California.*

Labor

Degrees Conferred

HENRY H. ALDERS, Ph.D., Yale, 1951. The meaning and significance of union jurisdiction.

MONROE BERKOWITZ, Ph.D., Columbia, 1951. The Master Weavers Institute, a case study of multi-employer bargaining.

ROBERT E. BERRY, Ph.D., Wisconsin, 1950. The state labor departments: organization, functions, personnel and finances, relations with the federal Department of Labor.

WALTER L. BLACKLEDGE, Ph.D., Iowa, 1951. Labor law guide of the Wagner Act.

ROBERT S. BOWERS, Ph.D., Wisconsin, 1951. The International Brotherhood of Teamsters and a theory of jurisdiction.

CLAY L. COCHRAN, Ph.D., North Carolina, 1950. Hired farm labor and the federal government.

JOHN R. COLEMAN, Ph.D., Chicago, 1950. Models of labor-management relations: a typology based on plant-level collective bargaining studies.

HAROLD E. DREYER, Ph.D., Massachusetts Institute of Technology, 1951. Attitude and behavior change in an industrial organization.

WILLIAM R. DYMOND, Ph.D., Cornell, 1950. Labor-management cooperation: a case study approach.

RICHARD EILBOTT, Ph.D., New School for Social Research, 1949. Health plans under collective agreements.

JOSEPH GOLDBERG, Ph.D., Columbia, 1951. American seamen: a study in twentieth century collective action.

ARTHUR T. JACOBS, Ph.D., Michigan, 1951. Some significant factors influencing the range of indeterminateness in collective bargaining negotiations.

JOHN W. KENNEDY, Ph.D., North Carolina, 1951. A history of the Textile Workers Union of America, C.I.O.

FRED E. KINDIG, Ph.D., Pittsburgh, 1951. Some problems in job evaluation of organized clerical and technical employees.

HERMAN KLEINE, Ph.D., Clark, 1951. The legal minimum wage in the United States.

WILLIAM A. KOIVISTO, Ph.D., Chicago, 1951. The value orientation problem in selected industrial relations studies.

THEODORE H. LANG, Ph.D., New York, 1951. An evaluation of the personnel function as administered in operating agencies of the municipal government of New York.

CHIH-WEI LEE, Ph.D., Chicago, 1951. A theoretical analysis of the guaranteed annual wage.

SOLOMON B. LEVINE, Ph.D., Massachusetts Institute of Technology, 1951. Union-management relations and technical change: a field study of experiences in woolen and worsted textile mills.

HUGH G. LOVELL, Ph.D., Massachusetts Institute of Technology, 1951. Mediation process.

JEWEL G. G. MAHER, Ph.D., Chicago, 1951. Organization and collective bargaining by radio artists.

ROY L. MARX, Ph.D., Wisconsin, 1951. Wage determination in public and quasi-public employment: a study of the background, administration, and economic effects of wage determination under the Davis-Bacon and Walsh-Healey Acts.

KENNETH M. MCCAFFREE, Ph.D., Chicago 1950. An analysis of the differential in earnings between white-collar and manual occupations in 1939.

THOMAS J. MCDONAGH, C.S.C., Ph.D., Wisconsin, 1951. Some aspects of the Roman Catholic attitude toward the American labor movement, 1900-1914.

SEYMOUR M. MILLER, Ph.D., Princeton, 1951. Union structure and industrial relations: a case-study of a local union.

CHESTER A. MORGAN, Ph.D., Iowa, 1951. An analysis of postwar American labor relations legislation.

MARK PERLMAN, Ph.D., Columbia, 1950. Approaches to industrial government in Australia: role of the arbitration court in certain industries.

LOUIS B. PERRY, Ph.D., California (Los Angeles), 1950. The labor movement in Los Angeles 1933-1939.

ALBERT E. REES, Ph.D., Chicago, 1950. The effect of collective bargaining on wage and price levels in the basic steel and bituminous coal industries, 1945-48.

ROY R. REYNOLDS, Ph.D., Massachusetts Institute of Technology, 1951. Public policy with respect to the settlement of labor disputes in the Canadian railway industry.

ALVIN SCHILD, Ph.D., Iowa, 1950. Organized labor in a welfare economy.

GERALD G. SOMERS, Ph.D., California, 1951. The significance of trade unionism in the inflationary potential of full employment.

JAMES S. STEWART, Ph.D., New York, 1951. Reemployment after military service.

ROBERT L. THISTLETHWAITE, Ph.D., Iowa, 1951. A critical analysis of the labor press.

HARRY G. TREND, Ph.D., Wisconsin, 1951. The labor union monopoly issue.

RICHARD C. WILCOCK, Ph.D., Illinois, 1951. Employment trends in Illinois in relation to unemployment reserves (1935-1960).

JOHN WINDMULLER, Ph.D., Cornell, 1951. American labor's role in the international labor movement, 1945 to 1950.

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HOWARD A. CUTLER, B.A., Iowa 1940; M.A., 1941. Toward an understanding of adjustment to work. *Columbia.*

THOMAS HAMPTON, B.S., Louisiana State, 1931; M.S., 1945. A survey of technical occupations in Louisiana with implications for technical education. *Cornell.*

JACOB SEIDENBURG, LL.B., Pennsylvania, 1948. Use of injunction in New York State. *Cornell.*

JOHN H. SLOCUM, B.A., Chicago, 1939-41; M.A., 1946. A study of the labor relations of selected colleges and universities and their maintenance employees. *Cornell.*

EDWARD WICKERSHAM, B.S., Illinois, 1948. Opposition to the international officers U.M.W.A. 1919-33. *Cornell.*

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JOSEPH ALEXANDER, B.S., Oklahoma, 1946; M.A., Columbia, 1947. A history of the labor movement in New York City from 1800-1935, with special reference to the period from 1900-1935—a study in the growth of organized labor. 1952. *New York.*

DAN BALABAN, B.S., Massachusetts State College, 1942; M.A., New School for Social Research, 1948. Labor attitudes and productivity. *New School for Social Research.*

JOHN W. BALLANTINE, B.A., Harvard, 1942; M.A., 1948. Industrial government under collective bargaining. 1952. *Harvard.*

NICHOLAS A. BEADLES, B.A., North Carolina, 1940; M.A., Colorado, 1947. Arbitration through time. 1952. *Harvard.*

FLORENCE B. BERGER, B.A., Brooklyn, 1943; M.A., Columbia, 1946. The union health center. 1952. *Columbia.*

DILLARD E. BIRD, B.A., Cincinnati, 1933; M.B.A., Ohio State, 1938. The relation of stabilization within the business organization to guarantee of work or wages. 1951. *Ohio State.*

DONALD J. BLAKE, B.S., Harvard, 1945; M.A., California, 1947. The development of seasonal working class organization in Sweden with special references to political and social as well as economic aspects thereof. 1952. *California.*

HERBERT BLOCK, B.A., Syracuse, 1940. Wage practices in federal civil service. 1952. *New York.*

JONAH BLUSTAIN, B.S.S., College of the City of New York, 1940. The validity of the predictions issuing from the American Federation of Labor and the Communist party (USA) 1933-1939, as to the effect of the collective bargaining program of the New Deal upon organized labor. *New York.*

PHILIP A. BROOKS, B.A., Chicago, 1935, M.B.A., 1943. Multiple-industry unionism: a case study in Hawaii. 1952. *Columbia.*

MARJORIE S. BROOKSHIRE, B.A., Texas, 1943; M.A., 1945. Employment of Mexican-Americans in industry in Nueces County, Texas. 1952. *Texas.*

TONY BROUWER, M.A., Michigan, 1947. Economic implications of the forty-hour week. 1952. *Michigan.*

ROBERT L. BUNTING, M.A., Chicago, 1948. A study of the labor market with respect to employer concentration. 1951. *Chicago.*

LEONARD F. CAIN, B.A., St. Joseph, 1943; M.A., Catholic, 1947. The Irish labor movement under the Free State and the Republic. 1952. *Catholic.*

WILLIAM CAIN, M.A., Iowa, 1946. Economic and social implications of the Taft-Hartley Act. 1952. *Iowa.*

ROBERT CHRISTIE, B.A., Swarthmore, 1949. History of the United Brotherhood of Carpenters and Joiners Union. 1952. *Cornell.*

ROBERT G. CONWAY, B.A., New Mexico, 1942; M.A., 1946. Employment in New Mexico. *New School for Social Research.*

ALOYSIUS E. CUSSEN, B.A., Boston, 1941; M.A., Notre Dame, 1948. Trade union policies in the Brockton Shoe Industry. 1951. *Columbia.*

RICHARD T. EASTWOOD, B.A., Tarkio, 1936; M.A., Nebraska, 1939. Labor law and its administration in the lower South. 1952. *Wisconsin.*

MANUEL EBER, B.A., Rochester, 1940; M.A., Chicago, 1948. Union consideration of the employment effect of economic policies: case studies. 1952. *Chicago.*

MILTON T. EDELMAN, B.S., Chicago, 1946; M.B.A., Pennsylvania, 1947. Organized labor and national economic policy in World War II. 1951. *Illinois.*

JACK ELLENBOGEN, B.A., Wisconsin, 1946; M.A., 1951. An evaluation of the several theories of the labor movement. 1952. *Wisconsin.*

LAURA ESTABROOK, B.A., Bryn Mawr, 1939. The settlement of national emergency labor disputes, 1945-1950. 1953. *Columbia.*

JACK FARKAS, B.B.A., College of the City of New York, 1940; M.A., Columbia, 1949. Origins and early growth of American trade unions. 1952. *Columbia.*

ROBERT R. FRANCE, B.A., Oberlin, 1947; M.A., Princeton, 1950. Governmental intervention in strikes which threaten the public safety. 1952. *Princeton.*

CYRIL L. FRANCIS, B.A., Toronto, 1940; M.A., 1946. Government seizure in labor disputes. 1952. *Wisconsin.*

EARL B. FRENCH, M.A., Iowa, 1949. An economic study of fair employment practice legislation. 1952. *Iowa.*

GEORGE A. FULLER, M.A., Iowa, 1939. The development and installation of a wage and salary structure for a major airline. 1952. *Iowa.*

IRWIN GERARD, B.S.S., College of the City of New York, 1941; M.A., Columbia, 1947. Municipal adjustment of labor disputes in private industry. 1952. *Columbia.*

WILLIS E. GIESE, B.S., Stout Institute, 1935; M.S., Purdue, 1940. Technical problems of national empolyment planning in the United States. 1952. *Wisconsin.*

CURRY W. GILLMORE, B.A., Texas, 1945; M.A., 1947. Collective bargaining in the Bell Telephone System. 1952. *Columbia.*

KALMAN GOLDBERG, B.A., Wisconsin, 1949; M.A., Pennsylvania, 1950. Explorations into wage policy and rate-setting policies of selected labor groups. 1953. *Cornell.*

HARRY I. GREENFIELD, B.S.S., College of the City of New York, 1942; M.A., Columbia, 1947. The theory and practice of sliding scale wage agreements in the United States. 1952. *Columbia.*

RUSH V. GREENSLADE, B.A., Princeton, 1938; M.A., Chicago, 1948. The economic effect of unionism in the bituminous coal mining industry. 1951. *Chicago.*

PETER GREGORY, B.A., Ohio Wesleyan, 1948; M.A., Harvard, 1950. Wage determination in the local labor market. 1952. *Harvard.*

GORDON M. HAFERBECKER, B.Ed., Stevens Point Teachers, 1939; M.A., Northwestern, 1942. History of Wisconsin labor legislation. 1952. *Wisconsin.*

ROBERT HAMMER, B.S., College of the City of New York, 1942; M.A., Columbia, 1945. Industrial relations in the New York City general trucking industry. 1951. *Harvard.*

VIRGIL JAMES, B.S., Utah, 1936; Teachers Certificate, Sam Houston State Teachers College, 1939. A case study of hospital employee compensation. 1951. *Cornell.*

GEORGE B. HELIKER, M.A., Michigan, 1949. Grievance arbitration in the automobile industry. 1952. *Michigan.*

RICHARD E. JAY, B.A., Texas Christian, 1946; M.A., 1947. Case study of a successful dependent union: the retail clerks in the San Francisco East Bay area (Alameda County). 1952. *California.*

EUGENE E. JENNINGS, M.A., Iowa, 1950. A study of the relationship of the foreman's personality to the development of cooperation or resistance in the worker. 1952. *Iowa.*

DAVID B. JOHNSON, B.A., Antioch, 1942; M.S., Wisconsin, 1948. Labor relations in the atomic energy industry. 1952. *Wisconsin.*

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HERBERT R. KROEKER, B.A., Bethel, 1938; M.A., Kansas, 1942. Fact-finding boards in labor disputes. 1952. *Nebraska.*

AARON KRUTE, B.A., Harvard, 1948; M.A., 1950. Seizure and compulsory arbitration in emergency labor disputes. 1951. *Harvard.*

RUSSEL KUCHEL, M.A., Iowa, 1942. The role of organized labor in a planned economy. 1952. *Iowa.*

STANLEY B. KURTA, B.A., Brooklyn, 1941. Variations in the intensity of labor effort: a study in group dynamics. 1952. *Johns Hopkins.*

LEONARD A. LECHT, B.A., Minnesota, 1942. Collective wage determination in railroads. 1952. *Columbia.*

MARK W. LEISERSON, B.A., Harvard, 1949. Wage structure and worker behavior. 1951. *Harvard.*

LESTER LEVY, B.A., Rutgers, 1949. Union government policies and their impact on the wage structure of the industry; the automobile workers as a case study. 1953. *Cornell.*

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RAMSEY H. MADANY, M.A., Iowa, 1949. An analysis of welfare trends in recent American labor legislation. 1952. *Iowa.*

JOHN E. MAHER, B.A., Harvard, 1948; M.S., Wisconsin, 1949. Union, non-union inter-occupational wage differentials. 1952. *Harvard.*

HOWARD D. MARSHALL, B.A., Columbia, 1947; M.A., 1949. The effects of unions on labor mobility and labor turnover. 1953. *Columbia.*

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EUGENE C. MARTINSON, M.A., Michigan, 1946. British trade unionism and national economic policy. 1952. *Michigan.*

ROYAL MATTICE, B.S., Purdue, 1933; M.A., Mississippi, 1935. The development of labor unions in Florida. 1952. *North Carolina.*

ROBERT M. MOONEY, B.A., St. Mary's University, 1941; M.A., Catholic, 1947. Labor policies in the jewelry industry: New England area. 1953. *Catholic.*

DANIEL P. MOYNIHAN, B.N.S., Tufts, 1946; B.A., 1948; M.A., Fletcher School, 1949. United States and the International Labor Organization. 1952. *Fletcher School of Law and Diplomacy.*

GEORGE E. MUNN, B.A., Wisconsin, 1931; M.A., 1939. Present-day labor-management thought on sound industrial relations. 1952. *Wisconsin.*

LESLIE MUNNEKE, M.A., Iowa, 1947. A social and economic analysis of recent state labor legislation. 1952. *Iowa.*

EVANS B. MURRAY. Some causes of dis-harmony in union-management relations: big meat packing, 1939-49. 1952. *Chicago.*

OSCAR A. ORNATI, B.A., Hobart, 1949; M.A., Havard, 1950. An analysis of the logic of collective bargaining negotiations. 1951. *Harvard.*

STEPHEN B. PACKER, B.A., Columbia, 1948; M.A., Chicago, 1950. Causes and extent of low returns to southern agricultural labor. 1953. *Columbia.*

JOHN PARKANY, D.Jur. Budapest, 1945; M.A., Georgetown, 1949. The effects of wage changes upon employment under prevailing American economic conditions. 1952. *Columbia.*

NORMAN G. PAULING, B.A., Texas, 1944; M.A., 1947. Relations of government and labor in New Zealand. 1952. *Texas.*

JOHN M. PETERSON, B.A., Washington, 1942; M.B.A., Harvard, 1947; M.A., Chicago, 1950. "Shock effect" of a wage increase on management efficiency. 1951. *Chicago.*

CHARLES PHILLIPS, M.A., Iowa, 1950. State efforts to settle labor disputes in public utility industries. 1952. *Iowa.*

LLOYD F. PIERCE, B.A., Carson-Newman, 1939; M.A., American, 1945. A history of the American Association for Labor Legislation. 1952. *Wisconsin.*

ARTHUR R. PORTER, JR., B.S., Washington and Lee, 1940; M.A., Pennsylvania, 1948. Property rights in jobs—a case study of the practices of the International Typographical Union. 1952. *Pennsylvania.*

ROBERT RAIMON, B.S., Columbia, 1947; M.S., Cornell, 1948. Comparative wages and their relevance to wage determination, with particular reference to the wage survey work of employer associations. 1951. *Cornell.*

LOUIS REMMERS, B.A., Antioch, 1946; M.S., Purdue, 1948. A qualitative study of some determinants of membership participation in a local union. *Cornell.*

RAYMOND RITLAND, M.A., Iowa, 1948. A study of state and federal regulation of the closed shop. 1951. *Iowa.*

Robert McC. Robinson, B.A., California, 1935; M.A., 1937. A history of the teamsters in the San Francisco bay area, 1850-1950. 1951. *California.*

Theodore W. Roesler, B.S., Nebraska, 1941; M.A., Nebraska, 1947. State-federal relations in labor legislation. 1952. *Wisconsin.*

William E. Rogers, B.A., Missouri, 1941; M.A., 1947. The St. Louis Labor Health Institute: a study in labor-management cooperation. 1951. *Missouri.*

Benjamin A. Rogge, M.A., Nebraska, 1946. Wage policy and the location of industry. 1951. *Northwestern.*

Hilda Rosenbloom, M.A., Radcliffe, 1949. An analysis of benefits for medical care and sickness in collective bargaining agreements. 1952. *Harvard.*

Sverre I. Scheldrup, B.A., North Dakota, 1928; B.S., 1930; M.A., 1931. Labor-cooperative relations in Norway. 1951. *Wisconsin.*

Joseph Scherer, B.A., Brooklyn, 1939; M.A., Chicago, 1948. Collective bargaining in service industries: a study of the year-round hotels. 1951. *Chicago.*

George Seltzer, B.A., Chicago, 1940. The economics of multi-industry unionism. 1951. *Chicago.*

Harold A. Shapiro, B.S., Milwaukee State Teachers College, 1939; M.Ph., Wisconsin, 1940. History of labor in San Antonio, Texas. 1951. *Texas.*

Karl F. Simpson, Jr., B.A., Baker, 1944; M.A., Northwestern, 1946. The survival capacity of public service unions. 1952. *Wisconsin.*

Stephen C. Smith, B.A., DePauw, 1943. Employment opportunities in rural areas. 1951. *Wisconsin.*

Irvin Sobel, B.S., Ohio State, 1939; M.A., 1946; M.A., Chicago, 1948. Analysis of the pattern of collective bargaining in the rubber industry. 1951. *Chicago.*

John H. D. Spencer, B.A., Florida, 1941; M.A., 1942. Labor mobility in the El Paso area. 1952. *North Carolina.*

Benjamin S. Stephansky, B.A., Wisconsin, 1939; M.A., 1942. Role of American labor in the international scene. 1952. *Wisconsin.*

Robert E. Strain, B.A., Wichita, 1937; M.A., Wisconsin, 1946. Occupational wage rate differences: determinants and recent trends. 1952. *Wisconsin.*

George Streuss, B.A., Swarthmore, 1947. Leadership, participation, and democracy in the local union. 1951. *Massachusetts Institute of Technology.*

Jay Tabb, M.A., Chicago, 1949. A study of white collar unionism (tactics and policies pursued in building the Wholesale and Warehouse Workers' Union of New York). 1952. *Chicago.*

Gerald Thompson, M.A., Iowa, 1948. The role and the effects of a private industrial pension plan. 1952. *Iowa.*

Kenneth Thompson, M.A., Iowa, 1947. Wage determination in the tractor industry. 1951. *Iowa.*

Procter Thomson, B.A., Ohio State, 1940; M.A., 1941; M.A., Chicago, 1948. The productivity of labor in agriculture: an international comparison. 1951. *Chicago.*

Halsten J. Thorkelson, B.A., Wisconsin, 1938; M.A., 1946. Membership activities in selected trade unions. 1952. *Wisconsin.*

Gene B. Tipton, B.A., California (Los Angeles), 1944; M.A., 1947. The labor movement in the Los Angeles area 1939-1949. 1952. *California* (Los Angeles).

William B. Wait, B.A., Tulane, 1940; LL.B., 1942. An historical and comparative study of the development of labor legislation in New York and California. 1953. *Cornell.*

John R. Walker, B.A., Georgetown, 1943; M.A., Columbia, 1948. Labor arbitration between General Motors and the U.A.W. 1953. *Columbia.*

Aaron W. Warner, B.A., New York, 1929; LL.B., Harvard, 1932. Labor under planning: a case study in British trade unionism. 1951. *Columbia.*

Herbert E. Weiner, B.S.S., College of the City of New York, 1941; M.A., Columbia, 1943. Public policy and the regulation of discrimination in employment. 1952. *Columbia.*

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ROBERT J. WOLFSON, M.A., Chicago, 1950. Regional wage differentials for hired agricultural labor. 1951. *Chicago.*

NORMAN J. WOOD, B.A., Tusculum, 1947; M.A., Columbia, 1948. Restrictions of work output by the American railway unions. 1953. *Columbia.*

MURRAY YANOWITCH, B.S.S., College of the City of New York, 1947; M.A., Columbia, 1949. Some aspects of labor-management relations in the USSR. 1952. *Columbia.*

SHIH CHENG YU, M.A., Iowa, 1949. A study of non-wage labor costs. 1952. *Iowa.*

Population; Social Welfare and Living Standards

Degrees Conferred

EUGENE R. BEEM, Ph.D., Pennsylvania, 1951. Consumer financed testing and rating agencies in the United States and their functions in the economy.

HERMAN D. BLOCH, Ph.D., New School for Social Research, 1950. Socio-economic discrimination against the New York City Negro.

ARTHUR D. BUTLER, Ph.D., Wisconsin, 1951. The public employment service in the United States.

THOMAS J. HAILSTONES, Ph.D., St. Louis, 1951. Historical and economic aspects of pension plans in the automobile industry.

ERNEST KURNOW, Ph.D., New York, 1951. The modern foundation: a problem in social and administrative control.

HARVEY LEIBENSTEIN, Ph.D., Harvard, 1951. Effect of seniority rules and work-sharing on unemployment compensation benefit costs.

CALVIN W. STILLMAN, Ph.D., Chicago, 1950. Economic analysis of the policies of organized medicine.

Theses Completed and Accepted

JOSEPH M. BECKER, B.A., Xavier, 1931; M.A., St. Louis, 1936; S.T.L., 1946. Charges of abuse in unemployment benefits during the reconversion period; a study in limits. *Columbia.*

BRUNO J. HARTUNG, B.S., St. Vincent, 1939; M.A., Catholic, 1948. A study of the economic status of the professor in American colleges and universities. *Catholic.*

Theses in Preparation

GEORGE W. BARCLAY, B.A., Pennsylvania State, 1945; M.A., Princeton, 1950. A demographic study of Taiwan as a case of colonial development. 1952. *Princeton.*

FRANCIS W. BARSALOU, B.S., Drake, 1947; M.B.A., Southern California, 1949. Economics of group medical service in the United States. 1952. *Southern California.*

GLADYS C. BIRNKRANT, B.A., Hunter, 1945; M.A., Yale, 1946. Some monetary and fiscal effects of private pension financing. 1952. *Wisconsin.*

JOHN J. CARROLL, M.A., Michigan, 1947. Fiscal aspects of social security programs. 1952. *Michigan.*

JOHN A. COPPS, B.S., Wisconsin, 1947; M.S., 1948. Views and concepts of social security. 1952. *Wisconsin.*

GEORGE T. DOWDY, M.S., Ohio State, 1948. An economic analysis of consumer food buying habits. 1952. *Ohio State.*

ARTHUR W. ELSE, B.S., Milwaukee State Teachers, 1938; M.Ph., Wisconsin, 1942. Compulsory health insurance movements in the United States. 1952. *Wisconsin.*

ERNEST M. VAN DEN HOAG, M.A., Iowa, 1942. Economic and social aspects of education. 1952. *New York.*

E. A. HALE, B.A., Gustavus Adolphus, 1943; M.A., Illinois, 1948. Analysis of wage earner budget studies with emphasis on certain sub-groups of purchases, especially meats. 1952. *Illinois.*

JULES JOSKOW, B.S., College of the City of New York, 1941; M.A., Columbia, 1942. The health insurance plan of greater New York. 1952. *Columbia.*

JOSEPH J. KLOS, B.S., Oklahoma A. & M., 1940; M.S., 1941. The farmers and social security. 1952. *Wisconsin.*

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ROBERT D. MASON, B.A., Fredonia State Teachers, 1946; M.S., New York State College for Teachers, 1947; M.A., Vanderbilt, 1949. Long range financing of unemployment insurance in Tennessee. 1952. *Vanderbilt.*

ROBERT G. MENEFEE, B.A., Berea, 1940; M.B.A., Tulane, 1942. Temporary disability compensation in the United States. 1952. *Wisconsin.*

LEON D. MOSKOWITZ, B.S., College of the City of New York, 1947; M.S., Wisconsin, 1948. The C.I.O. and social security. 1952. *Wisconsin.*

PHILLIP J. NELSON, B.A., Texas, 1948; M.A., Columbia, 1950. The relationship between consumption habits and productive efficiency. 1953. *Columbia.*

ROBERT OSBORN, JR., B.A., Princeton, 1943; M.A., 1948. The concept of mobility in economic theory. 1952. *Princeton.*

WALTER POLNER, B.A., Wisconsin, 1947; M.A., 1948. Railroad social security. 1952. *Wisconsin.*

DANIEL B. RATHBUN, B.A., Pomona, 1947. Economic evaluation of the Home-Loan Provisions of Title III of the Servicemen's Readjustment Act, as amended. 1952. *California.*

JEROME ROTHENBERG, B.A., Columbia, 1945; M.A., 1947. Welfare economics applied to hospitals. 1952. *Columbia.*

NORMAN B. RYDER, B.A., McMaster, 1944; M.A., Toronto, 1946; M.A., Princeton, 1949. The measurement of temporal variation in reproductivity. 1952. *Princeton.*

SIDNEY W. SALSBURG, B.A., Michigan State, 1946; M.A., Wisconsin, 1947. The Townsend Plan and other universal pension programs. 1953. *Wisconsin.*

CHUEH-YING T. SHIH, B.A., Central Political Institute (China), 1940; M.A., Wisconsin, 1946. Analysis in the field of health insurance. 1952. *Wisconsin.*

GORDON S. SKINNER, B.S., Boston, 1948; M.S., Wisconsin, 1949. Experience rating in unemployment insurance. 1952. *Wisconsin.*

FRED SLAVICK, B.A., Wisconsin, 1946; M.A., 1947; M.A., Princeton, 1949. The provision of health insurance and medical care through collective bargaining. 1952. *Princeton.*

GEORGE J. STOLNITZ, B.A., College of the City of New York, 1939; M.A., Princeton, 1942. Studies in the derivation of life table measures from single censuses. 1951. *Princeton.*

LYLE R. TRUEBLOOD, B.S., Missouri, 1948; M.A., 1949. Disqualification of unemployment compensation benefits in Indiana. 1952. *Indiana.*

CHARLES E. WULLER, B.S., St. Louis, 1938; M.S., 1943. A critique of the federal program of mortgage insurance and home-loan guaranties, 1934-1949. 1952. *St. Louis.*

ABRAHAM I. ZELEN, B.S., New York, 1936; M.A., 1937. Medical men and social legislation in Victorian England. 1952. *New York.*

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DORIS MERRIAM, Assistant

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GEORGE ERNEST BARNETT

Thirty-fourth President of the American Economic Association, 1932

George E. Barnett was born in Cambridge, Maryland, February 19, 1873, and died in Baltimore, June 17, 1938. He received his A.B. degree at Randolph-Macon College in 1891 and his Ph.D. at Johns Hopkins in 1902. His alma mater awarded him the LL.D. in 1934. After serving successively as instructor, associate, and associate professor of political economy at Johns Hopkins from 1901 to 1911, he was appointed professor of statistics, which post he occupied until his death.

Professor Barnett had a faithful following. His teaching was vitalized by drawing upon his experiences in labor arbitration, service for government commissions, and association activities. In addition to the American Economic Association, he was a member of the American Statistical Association and the American Association for Labor Legislation. His presidential address at the 1932 meeting was entitled, "American Trade Unionism and Social Insurance."

Professor Barnett's changing interests were reflected in the character of his publications. In the early part of his career his interests were in banking and statistics but shifted later to the field of labor. His first book, on *State Banking in the United States,* was published in 1902, the year he received his doctor's degree. This work later developed into a contribution to the reports of the National Monetary Commission, 1911, with the title, *State Banks and Trust Companies Since the Passage of the National Bank Act.* In 1904 he edited *A Trial Bibliography of American Trade Union Publications* and was co-editor, with Jacob H. Hollander, of *Studies in American Trade Unionism,* 1906. *The Printers,* A Study in American Trade Unionism, constituted Number 3 of the American Economic Association "Third Series," published in 1909. In 1914, he was in charge of investigations in the field of collective bargaining for the United States Commission on Industrial Relations. His other publications include *Mediation, Investigation, and Arbitration* (with D. A. McCabe), 1916, and *Machinery and Labor,* 1926.

Number 34 of a series of photographs of past presidents of the Association.

George E. Barnett

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KNUT WICKSELL—A CENTENNIAL EVALUATION

By CARL G. UHR*

Johan Gustav Knut Wicksell was born on December 20, 1851 in Stockholm to a Swedish middle-class family. He died in his 75th year of life on May 3, 1926. During his years of graduate study, 1880-90, and his career as a creative economic theorist, 1890-1915 being his most active period, he was a contemporary of Menger, Böhm-Bawerk, Walras, Marshall, Wagner, and Spiethoff, whose works, apart from those of his colleagues in Sweden, D. Davidson and G. Cassel, influenced his own development and thought in many ways.[1]

Wicksell's "student years" were unusually long.[2] Before he was appointed to the chair of political economy and fiscal law at Lund University in 1900, he was a mature man with a growing family, 49 years of age, and already a writer of renown who, apart from some important articles and tracts, had published three of the five volumes that con-

* The author is a research associate, University of California.

[1] The writer is especially indebted to Professor Emeritus Emil Sommarin, Wicksell's successor in the chair at Lund University, for biographical information. Our account of Wicksell's career is based in part on private correspondence with Professor Sommarin, in part on his article, "Das Lebenswerk von Knut Wicksell," *Zeitschrift für Nationalökonomie,* Vol. 9 (1930-31), pp. 221-67, and mostly on two chapters in his recent, charming book, *Studenter och Arbetare* (Students and Workers), (Lund, 1947), where he relates Wicksell's rôle in the social reform movements both at Uppsala and at Lund Universities.

[2] Wicksell enrolled at Uppsala University in 1869 to study mathematics and physics; earned a B.A. degree in 1872 and later, 1885, a graduate degree, *philosophiae licentiatus,* in mathematics. Such degrees are given to advanced graduate students after comprehensive examinations in which, *inter alia,* preliminary drafts of their doctoral theses are evaluated. Usually such drafts are elaborated into finished form and another set of examinations ensue, resulting in the Ph.D. Wicksell went on instead with economics, in which, after study abroad, 1885-90, and further research in Sweden, he earned another *phil. lic.* at Uppsala, 1894, and his doctorate, 1895, on a thesis in the theory of tax incidence. The latter was incorporated as Part I of his work, *Finanztheoretische Untersuchungen* (Jena, 1896). Finally, 1899, he earned one more degree, *utriusque juris candidatus,* in "fiscal law." This was necessary for him in order to apply for a professorship in

stitute his major works.[3] Two circumstances contributed to the tardy materialization of his academic career, his relatively late introduction to economics in about 1880 from graduate study of mathematics (which latter he pursued until 1885 when he went abroad for five years to study economics at the universities of England, France, Germany, and Austria), and his early reputation for social and religious unorthodoxy. The latter made his appointment a hotly contested issue and a decided victory for academic freedom.

At Lund his career was very productive. He contributed a stream of significant articles mainly to the newly launched Swedish economic journal, *Ekonomisk Tidskrift*, and to certain German learned periodicals, and wrote the two volumes of his *Lectures on Political Economy*.[4] In 1916, on reaching mandatory retirement age (65) and pensioned status as a professor emeritus, Wicksell left Lund to return to Stockholm. From that time until his death, he devoted himself to a very busy life of writing in the learned and the daily press on the Swedish inflation problem occasioned by World War I, and to service on a series of government commissions of inquiry into Sweden's monetary and taxation problems.

I.—*Orientation and Method in Economics*

Although this sketch of Wicksell's life reveals very little about him that seems unusual other than a tenacious studiousness, the quality of his work as an economist was determined both by his early training in mathematics and by his youthful and life-long attachment to the social reform movement of the 1880's.

His mathematical background accounts for the form and organization of his writing, and often endows the latter with a very formal,

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economics, for at that time economics was offered as an elective subject by the Faculty of Law. Hence professors of that subject were expected to be well informed and to offer courses on the relation of economics to jurisprudence, especially relating to the fiscal institutions and activities of government. During most of these years Wicksell and his family existed on research grants by Swedish foundations and on what little his writing brought in.

[3] *Über Wert, Kapital und Rente* (Jena, 1893), an elegant mathematical treatment of static equilibrium theory, synthesizing the work of the Lausanne and the Austrian schools; *Finanztheoretische Untersuchungen* (Jena, 1896), an elaboration of his doctoral thesis into a lofty and speculative treatment of public finance; *Geldzins und Güterpreise* (Jena, 1898), translated, 1936, as *Interest and Prices*, his epoch-making treatise on monetary theory.

[4] *Lectures on Political Economy*, Vol. I, *General Theory* (first Swedish edition, 1901), a revision and elaboration of his earlier analysis in *Über Wert;* and Vol. II, *Money* (1906), an elaboration of *Interest and Prices*. Both volumes were translated 1934-35; we refer to them as *Lectures-I* and *Lectures-II*. They went through several editions, the latter with some revision, 1915, on points relating to the nature of monetary equilibrium.

abstract character. From mathematics he brought to economics a methodology he was convinced would supersede the sterile empiricism of the German historical school and expose beyond plausibility the doctrinaire extravagances alike of the harmony-economists and their Manchester followers and of their bitter opponents, the Marxist socialists.

This was the deductive method of successive approximation applied with telling effects by Cournot and Walras, whose works he held in high admiration. It permits the economist to abstract from confusing detail and interrelations and isolate the forces at work in simplified, hypothetical cases containing definite elements of the complex reality economic theory seeks to understand. Wicksell was convinced that pursuit of this method was indispensable for theoretical as well as practical progress in economics. It seemed to him that it, and it alone, gave promise of yielding the economist cogent hypotheses which he needs before he can fruitfully approach empiric data for verification or refutation of his theorems, and before he may offer guidance to or interpret the results of public and private economic policy.[5] This was also the reason he avoided statistical work, with the two exceptions of a brief sketch of a theory of index numbers, *Interest and Prices*, Chapter 2 and Appendix (which latter was omitted in the English translation), and a pamphlet, *Läran om befolkningen* (Theory of Population), 1910, in which he developed a method for forecasting the trend and composition of Sweden's population. In both cases he made a contribution, but, on the whole, he was inclined to concentrate on problems of pure theory and to leave to others the task of adapting and testing by practical application.

Few would deny that in his generation Wicksell was uncommonly successful in applying his mathematical method in almost all branches of economic theory. As was to be expected, it served him particularly well in static analysis, as in *Über Wert* and *Lectures-I*. There he was a master craftsman in deepening and extending received theory, in laying bare its limitations, in generalizing it by transforming and reconciling apparently contradictory analyses, such as those of Böhm-Bawerk and of Walras, into unified syntheses. Essential as this was for further progress, it was not here, not in the static equilibrium analysis, that his genius played its important creative rôle.

To the contrary, his greatness rests on the advance he made toward fruitful theoretical solutions of the problems of (1) capital accumulation, (2) the relations between distributive shares in conditions of net investment and technological change, and (3) monetary relations in a

[5] Wicksell's statements on "method" in economics were always brief; *cf.* the prefaces and introductions to his works, *Über Wert*, pp. i-xxi, and *Lectures-I*, pp. 1-11.

"pure credit" system. For all the progress he made in this sphere, which inevitably involved dynamic analyses, his method of successive approximation sometimes got in his way and kept him from making even greater contributions. The too static approximations he employed to deal with dynamic sequences prevented him, at times, from reaching certain insights which were attainable within the same problem-focus, and were discovered by his followers, Lindahl, Myrdal, and Ohlin.

If, however, his mathematical mode of thought determined the form and probably appreciably restricted the scope of his work, it did not detract from the far-reaching implications he was wont to draw from some of his formal demonstrations. Neither did it fetter that agile spirit of freedom and well-nigh prophetic sense of the possibilities of social reform that characterize his outlook and constitute the real meaning of his economic philosophy. Clues to the latter must be sought in the character of the man and in the circumstances and motives that attracted him to economics from other pursuits.

It is said that as a youth Wicksell, who, like most of his contemporaries, was brought up on the moral precepts of the state supported Swedish Lutheran Church, underwent a religious crisis from which he emerged an a-religious philosophical rationalist of the radical type. This tendency was reinforced by his studies and contacts in university life, especially in student activities relating to the social reform movement. In due course he became known not only for his intellectual acumen but also as a gifted speaker. As such he was elected chairman of the Student Corps at Uppsala, 1878-79. This in turn brought him invitations to lecture on diverse subjects to welfare and civic organizations. One of these occasions became a turning point in his life and led to his study of political economy in earnest.

In the spring of 1880 he was addressing a temperance organization on the causes and remedies for alcoholism. Among causes he pointed to the abject poverty and dreariness of home life for the majority of urban workers, a poverty reinforced by the arrival of more and more children. As a remedy he suggested it was up to the medical profession to perfect simple, safe methods of contraception to arrest excessive procreation, and to disseminate the knowledge and application of such methods. Had it not been for the fact that the substance of his lecture was reported in the daily press, Wicksell might calmly have returned to his mathematical studies. But as it was, what he had to say reached a wider, more articulate public. Since it offended against the mores of the times just as the Darwinian theory of evolution in an earlier day offended against theological dogma, the response was immediate and strong. He was criticized and reviled in the press by professors of medicine, clergymen, essayists, and editors. Overnight he

achieved the unenviable reputation of a "moral nihilist" and came to be regarded as the leader of a suspect small intellectual sect known as neo-Malthusians. He defended himself ably and with courage in articles and tracts, all of which added to his notoriety.

In this process he felt the need to make a more methodical study of population questions. So he made the acquaintance of D. Davidson, then a docent in economics at Uppsala. Davidson, who became his lifelong friend, introduced him to Malthus by lending him his copy of the *Principle of Population.* From there it was but a short step for him to the study of classical economics in its entirety. This he pursued in conjunction with mathematics until 1885 when, as we have seen, he went abroad to study modern economics. Upon his return to Sweden, Wicksell not only resumed his advocacy of the neo-Malthusian principles he had defended a decade earlier, but also broadened his activity in behalf of the social reform movement.

II.—*Social Reform Program or Theory of Economic Development*

At the close of the 19th century, Wicksell was convinced that the world possessed few additional, unexplored, and unexploited natural resources that would permit continued, rapid growth in numbers without impoverishment. He also thought the industrial revolution and epoch-making inventions of that century represented a unique period in man's economic history, one not likely to be outdistanced by the technological progress to be expected during the 20th and later centuries. For these reasons he thought attainment of stationary population of optimum size[6] throughout the world to be the *sine qua non* for a prospective rise in the mass standard of welfare. Accordingly, he made this condition the basis for most of his speculations concerning the long run or the economic future.

However, granted a discernible tendency for population to become stationary at a size that is optimal in relation to the economy's resources and technology, Wicksell was optimistic about its future economic improvement, a process he was convinced would be hastened and made more harmonious by adoption of certain reforms his economic studies led him to advocate. This was implied in his statement that

> . . . the definition of political economy as a practical science is the theory of the manner of satisfying human needs which gives the greatest possi-

[6] He defined "optimum population" as a population of such size that its further increase involves a decrease in "social welfare," *Läran om befolkningen* (Theory of Population), (Stockholm, 1910), p. 42. His neo-Malthusianism recurs also in one of his most important tracts, *Socialiststaten och nutidssamhället* (The Socialist State and Contemporary Society), (Stockholm, 1905), pp. 34 ff., where he pointed out that the very substantial gains a socialist society may achieve by more effective resource utilization and income redistribution are threatened unless protected by a rational population policy.

> ble satisfaction to society as a whole, having regard for future generations as well as the present. . . . As soon as we begin seriously to seek for the conditions of the welfare of the whole, consideration for the interest of the proletariat must emerge; and from thence to the proclamation of equal rights for all is only a short step. . . . *The very concept of political economy, or the existence of a science with such a name, implies, strictly speaking, a thoroughly revolutionary programme.*[7]

His "revolutionary programme" contained at least four interrelated parts for a multiple attack on the major problems his analysis had uncovered: problems of (1) monopoly and imperfect competition, (2) inequality of income and wealth, (3) inequality of economic opportunity, and (4) economic instability associated with the trade cycle and with certain abberations of monetary policy and institutions.

A. *The Public versus the Private Sector of the Economy*

His program involved first a substantial expansion of the public sector of the economy, partly at the expense of the private enterprise sector, and chiefly in behalf of perpetuating for the future the freely competitive portion of the latter under more tenable and stable auspices.[8] Expansion of the public sector was in part to take the form of public ownership and operation of "natural" monopolies (public utilities) and also of "artificial" ones, or of "enterprises and industries showing unmistakable tendencies toward formation of cartels."[9]

Monopolistic enterprises should be acquired by local or national governments by properly compensating their private owners. But once acquired, Wicksell insisted they should be publicly operated to give consumers the full benefit of their realizable "economies of scale." This was to be achieved by a combination of taxes and a technique of pricing their output according to marginal unit cost. Their prices were to be reduced by trial and error, and their output and sales expanded according to elasticity of demand, up to an equilibrium point where the sale value of output increment sold after the last price reduction (*i.e.*, output increment times new lower price) exactly equals the increment in total cost of producing the extra output. Since marginal unit cost and price would in most such cases be less than average total unit cost on the corresponding total product, the resulting deficit should be met from taxation.

It is not certain that he would have applied this method universally,

[7] *Lectures-I,* pp. 3-4, italics supplied.

[8] *Finanztheoretische Untersuchungen,* p. viii.

[9] Wicksell's review of Pareto's *Cours* in *Zeitschrift für Volkswirtschaft, Sozialpolitik und Verwaltung,* Vol. 6 (1897), pp. 161-62 and also his article, "Riksbanken och privatbankerna" (The National Bank of Sweden and Private Banks), *Ekon. Tidskrift* (1919), Part II, pp. 177 ff., and *Finanztheoretische Untersuchungen,* pp. 125-38.

for he was aware that complications would arise in all but the simplest cases, but he did not stop to work them out. At any rate, by way of contrast, he thought it irrational for governments deliberately to operate public enterprises for profit as in the case of Prussia's state-owned railways. To his mind the *raison d'être* for public enterprises was to obtain a better allocation and utilization of the nation's resources than private monopoly offers, and not one of using them as engines of indirect taxation.[10]

Secondly, extension of the public sector of the economy was to take the form of a substantial increase in the variety and extent of social services. He considered social services as necessary and justified as a form of secondary or "social" distribution to compensate for income inequalities that arise in the course of primary or "functional" distribution to factor owners according to the marginal revenue productivity of productive factors. For, as he repeatedly said:

> On the whole it is a mistake to regard as obvious—as is so often done—that healthy persons capable of work must be able to live from their labor *alone*.[11]

His first concern among social services was for education. He not only wanted the government to make schooling "free" to the public at all levels of academic and vocational instruction, but also to provide subsistence grants for impecunious and worthy students. Further, he stressed the need for a broad program of social security legislation and for national health insurance. He would have devoted the proceeds of most of the progressive income and unearned increments taxes he advocated as support for these activities.[12]

B. *Reconstruction of the Fiscal System*

The second part of Wicksell's program called for revision of extant tax systems, mostly composed of indirect taxes, and for changes in the political conditions for determining national budgets and the revenue measures needed for their execution. Because of the outrageously regressive incidence of taxes in the 1890's, he urged decreased reliance on excise and tariff duties in the revenue system as a whole and adoption and development of progressive taxes on personal incomes, estates, and corporate profits, as well as a modification of the general property tax to capture an increasing share of "unearned" land value increments.

[10] *Finanztheoretische Untersuchungen*, pp. 104, 128 ff., 133-35.

[11] *Lectures-I*, p. 143; *Finanztheoretische Untersuchungen*, p. 146.

[12] On social security laws, see his articles, "Ålderdomskommittens betänkande" (Report of the Old Age Pension Committee), and "Resultatet" (The Result), *Ekon. Tidskrift* (1912), pp. 443-68; (1913), pp. 211-17; further, *Socialistaten och nutidssamhället*, pp. 28 ff., and *Progressiv beskattning* (Progressive Taxation), another tract (Stockholm, 1903), pp. 26 ff.

As for high sumptuary excises on liquor and tobacco, he argued for scaling them down to moderate rates and imposing consumer rationing instead, *i.e.*, a "liquor and tobacco control" system, to achieve more equitably the sumptuary ends, and improvement in public health and morals, that they were originally intended to serve.[13]

But tax reform, he realized, must be preceded by political reform to remove all property qualifications for the franchise. Hence he supported the movement for universal suffrage, aware that its achievement would shift political power from the minority of enfranchised property owners to the working class. To make possible an orderly evolution of political relations in this process, he insisted on special safeguards to protect the identity and integrity of political minorities from tyrannization by the majority. For minorities must be preserved to perform their vital task of criticism. The guarantees of a bill of rights were, in his opinion, not sufficient for this. It required more than that, namely, their effective inclusion in the system of representation. Hence he advocated an election system based on proportional representation.[14]

Thus it was both for political and for economic reasons that Wicksell supported the trade union movement and was anxious to extend "free" education to all. Trade unions seemed indispensable for the civic and democratic education of a politically inexperienced working class which suddenly might find itself in possession of national political power and might be maneuvered into perverting a representative, constitutional democracy into mobocracy that has it terminus in dictatorship.

Fully aware that even in a democracy with universal suffrage and proportional representation the potentially all-embracing fiscal power can be captured by narrow, sectional interests at the expense of the general welfare, Wicksell wanted to make doubly sure this would not happen. To that end he urged the following reform in matters involving budgets-and-revenues: (1) Budget proposals must always be accompanied by matching revenue or finance proposals so that expenditures are not approved without regard to the finance requirements they imply. (2) Budget and tax proposals, usually made by the administration and adopted as legislative agenda by simple majority vote in Parliament, must be alterable by amendment by any member or group in Parliament. And only those proposals that are approved by a "qualified majority," *i.e.*, two-thirds of the membership, are to be adopted and embodied in the final budget-and-revenue acts. According

[13] *Våra skatter—Hvilka betala dem och hvilka borde betala?* (Our Taxes Who Pays and Who Ought to Pay Them?), an important tract, issued by Wicksell under the pseudonym of Sven Trygg (Stockholm, 1894).

[14] *Den politiska rösträtten och skatterna* (The Political Franchise and Taxation), a tract, 1898; *Finanztheoretische Untersuchungen*, pp. 123 ff.

to Wicksell, this was necessary both for reasons of equity and on the grounds of the marginal utility calculus.[15]

Following Adam Smith, he believed governments should only undertake functions (*a*) that are not served by private enterprise, and (*b*) that are not served as well by private enterprise. The citizens via their representatives in Parliament must decide what those functions are. Such decisions must rest on a marginal utility calculus comparing the utility of proposed services with the tax burden they imply. In Wicksell's opinion, functions proposed for government action which fail of two-thirds majority apporval were not likely to be clearly and unequivocally in the general interest even if supported by ephemeral, bare majorities. Furthermore, functions that are approved must be served to a determinate extent. This involves division of the total budget into separate activities in proportions that, again, must correspond to the current status and expression of the general interest. Finally, in spending for budgeted purposes, government confers general benefits on the public at large and also special benefits on certain segments of that public. Spending for law enforcement may yield only general benefits, but spending for a river improvement yields greater benefits to adjacent property owners than to others. In general, the qualified majority in Parliament must feel that the marginal utility of a proposed government service at least equals the tax burden it imposes to give it approval. If the proposed service yields only general benefits, it should preferably—because of diminishing marginal utility of income—be supported by taxes levied according to the ability principle. If it yields only benefits for some and not for other citizens, it should be supported by taxes levied according to the benefit principle. If it yields both general and special benefits, it should be financed by benefit- and by ability-taxes in the proportions its separate and general benefits bear to the total benefits it confers.[16]

As it happened, Wicksell lived to see some of the foregoing reforms introduced in Sweden. Universal suffrage was achieved during World War I. The growth of the trade union movement and the Social Democratic Party ushered in several of the tax reforms for which he had pleaded and extended social services considerably in the fields of education, social security, public health and health insurance. While his proposal of two-thirds majority approval of budget and revenue acts was not adopted at the national level, where, instead, other innovations of fiscal policy were evolved, it was adopted in principle by a number of provincial and municipal governments. By pointing out this we do not imply that Wicksell and his followers were solely or largely responsible for these reforms. Nonetheless, a certain credit is due him

[15] *Finanztheoretische Untersuchungen*, pp. 115, 117, 124, 137, 156-ff.

[16] *Finanztheoretische Untersuchungen*, pp. 83-84.

for having foreseen and pleaded for most of them a generation or more before they took place.

C. *Monetary Reform*

In the third place, Wicksell's reform program called for changes in monetary institutions and policy which, in principle, anticipated by almost fifty years the compromise between monetary nationalism and international exchange stability which has found expression in the International Monetary Fund.

At the institutional level he wanted to strengthen the credit control exercised by discount policy and open-market operations of central banks over private banks. Ultimately he visualized nationalization of the central bank in each country and its replacing private commercial banks by opening affiliates in every town and hamlet. Then he pleaded for abandonment of the gold standard and for effective demonetization of gold. This was to be done by freeing central banks from the obligation to settle payments balances in gold by their entering into international clearings arrangements with each other to redeem each other's notes and drafts at par and sell the same to the public at par. Further to immunize them from the vagaries of gold production and of gold influx and efflux in the course of foreign trade, he thought it necessary that they cease the free minting of gold and abandon the practice of buying and selling gold at fixed mint prices. The world price of gold would henceforth depend chiefly on industrial demand in relation to its supply.[17]

At the policy level, most of his life he thought the aim of central banks in regulating the supply of money, now bank credit money, should be price stabilization, *i.e.*, stabilizing the value of money in terms of the price level of consumption goods. The means to that end were to vary central bank discount rates in the same direction as the consumer price index, thus offsetting a sustained rise in the latter by high discount rates and credit contraction and counteracting its sustained decline by reversing the process. He was convinced that this policy should be pursued both internally and internationally. To the latter end he asked that an international commission of experts work out an international price index to be the guide line for the concerted discount policy of central banks associated in the international clearings union. But, to obviate breakdown of this scheme from the balance of payments disequilibria that various nations develop from time to time as indicated by persistent debit clearings for the nations in question, he urged that, subject to the consent of the central bank majority in the clearings union, they be permitted to adopt discount policies run-

[17] *Interest and Prices*, Chap. 12, and *Lectures-II*, Chap. III, Sections 6-G and 6-H, and Chap. IV, Sections 9 and 10.

ning counter to that of the majority, and, with the cooperation of the latter, to engage in international capital transactions, etc., until the causes of their payments disequilibria had been overcome.

Toward the end of his life, 1925-26, it is true that Wicksell, impressed with his colleague Davidson's penetrating theoretical attack on his price stabilization aim, and further impressed by the monetary upheavals of World War I, modified his emphasis on price stabilization. In the end he had to admit its inconsistency with the conditions of monetary equilibrium which his own analysis had done so much to bring to light. To supplement it, he groped for other, more complex criteria for monetary policy (reminiscent of D. H. Robertson as of 1926), a matter he was unable to resolve to his own satisfaction.[18]

Yet this did not lessen the penetration of his insight into the essential requirements for stable international monetary relations, namely, an institutional arrangement which yields substantially the same exchange stability that was the glory of the gold standard but at the same time provides flexibility where the latter was rigid, *i.e.*, provides an orderly procedure for revaluation of exchange rates when persistent payments disequilibria occur. How much clearer and how much more correct his insight into these relations was than that of most of his contemporaries can best be seen if we recall that Marshall argued for a combination of the symmetallic standard, application of bank rate to restrain activities of speculators, and a tabular standard of value for long-term credit.

D. *Countercyclical Credit Policy*

The fourth part in Wicksell's program was addressed to the problem of economic instability. It called for government-supported extension of credit in times of depression to maintain a tolerable level of employment by inducing manufacturers to produce to stock when costs are low and to hold resulting inventories off the market until improvement of trade in recovery would make it possible to dispose of them at a gain.

He considered the trade cycle, as distinct from monetary crises (which he attributed chiefly to irrational criteria for monetary management under the gold standard), to be caused by the uneven and unpredictable movement of "real forces," particularly technological innovations and the associated jerky pace of investment in fixed real capital. This process, he thought, could be smoothed substantially by countercyclical production for inventory purposes. But the credit extension needed to finance the latter admittedly represented unusual risks. The

[18] *Cf.* his article, "The Monetary Problem of the Scandinavian Countries" originally written for *Ekon. Tidskrift* (1925), now translated and appended to *Interest and Prices,* pp. 199 ff.

banks, committed to his price stabilization policy, could not be expected to carry it out unaided, especially not at the exceptionally low interest rates that must be offered to induce much additional borrowing for inventory production in depression. Hence the government must either supplement bank credit with public credit, or else underwrite the risks and losses the banks may incur in this process.[19]

III.—*Evaluation of Wicksell's Reform Program*

The foregoing account of Wicksell's social reform program should dispel any feeling of contradiction between the abstract treatment that dominates his major works and the concrete aims his analysis indicated to be attainable. Moreover, in broad features it reveals his theory of economic progress. For years he had planned to write a third volume of Lectures (*cf.*, *Lectures-I,* pp. 7-8) to deal with social economy or with the conditions of economic progress, as we might express it today. There he intended to investigate the application of economic theory and precept to the penultimate problem of the science—the maximization of social welfare—under assumptions involving radical change or reform of existing institutions. He never found the energy to complete this task as a systematic exposition. Yet, as we have seen, he left behind enough fragments in his books, his tracts and articles, to give us his vision of the future more rational, more stable political economy.

Thus, in a greater measure than his celebrated contemporaries, Wicksell emerges as a theoretical apostle of the "mixed economy." He labored, more fundamentally than others, in the tradition of J. S. Mill, whose famous dictum seems to have dominated his outlook:

> . . . the Laws of Production of wealth partake of the character of physical truths. There is nothing optional or arbitrary in them. It is not so with the Distribution of wealth. That is a matter of human institution solely.[20]

Without sacrificing, indeed while emphasizing, the all-essential rights and freedoms of the individual, Wicksell pointed out clearly some of the paths whereby society may advance in an orderly fashion toward a more nearly optimal allocation of resources, greater income equality, effective equality of opportunity, increasing security and enhanced material welfare. For the system he delineated, for a society with a population of optimum size, a system of public and freely competitive private enterprise, guided by his conception of rational economic policy, gave promise of greater economic stability than prevailed in his own day. It was not a case of his system being designed to eliminate all economic

[19] *Lectures-I,* "Note on Trade Cycles and Crises," pp. 209-14.

[20] J. S. Mill, *Principles of Political Economy,* Ashley edition, pp. 199-200.

fluctuation, but the behavior of the economy could be expected to be such that average rate of output would be considerably closer to full capacity rate of production than in the past. And its productive capacity could also be expected to continue increasing with the progress of private and social investment and improvements in technology, for the reforms he advocated would not have impaired the inducements for these activities.

It is, of course, easy to criticize his vision of economic progress, especially with the benefit of hindsight. It is clear now that he placed too great reliance on the adjustment powers of the interest rate mechanism, that he made inadequate allowance for risk and uncertainty as impediments to investment, that he was not fully aware of the impact of large-scale deficit finance and huge public debts on central bank powers of monetary management. This and more can be said against his vision. But then we must remember that his writing largely pre-dates the fateful year 1914. He could not foresee the problems that have come to afflict a society which has exposed itself twice to the holocaust of total war. Who will gainsay that his reliance on interest rate variation and on counter-cyclical production for inventory purposes may not have been more effective than they now seem to most of us in preserving a tolerable degree of economic stability if the pre-1914 society had continued to evolve in peace? And if it had applied but a fraction of the resources and ingenuity it wasted on warfare to the social reforms he advocated?

For all that, Wicksell's greatness as an economist rests much more on his creativeness as a theoretician than on his views concerning economic development. His stature as a theoretician is in turn attributable to the vivid imagination with which he tackled intractable problems, and to the rigorous scientific method he applied in his work. As a result, several of his contributions are of value still, not so much because of the particular conclusions he formulated, for they have mostly been superseded by subsequent work. It is rather because of the highly fruitful points of departure he found from which to approach problems, and because of the flexible framework of analysis he developed, which afforded a wide perspective that enabled others to make further progress.

IV.—*Contributions to Economic Theory—Static Analysis*

A. *The Marginal Productivity Theory of Distribution*

Considering the state of economic theory as of 1890 it is not surprising that Wicksell sensed the need for a synthesis. With the Austrians, the British neo-classicists, and the Lausanne schools sharing related orientations in value theory but having divergent views on production, capital, and distribution, the time seemed ripe to him to

attempt a consistent synthesis between these approaches. In substance this is what Wicksell achieved in *Über Wert* by using the marginal-utility-marginal-productivity theories of Jevons and Menger, adding to these the derived Böhm-Bawerkian analysis of capital, and fusing the product within a Walrasian framework of general equilibrium to reveal the multiple causal interrelations of the theoretical edifice. In this process he became a founder of the marginal productivity theory of functional distribution.

Chronologically Wicksell was the first, in 1893, to demonstrate the "product exhaustion theorem," or the determinacy of functional distribution on the basis of product-exhaustion by imputation of distributive shares to cooperating factors of production in terms of their respective marginal productivity. However, he was content to let the credit for the "theorem" go to Wicksteed who, independently, adduced a more systematic demonstration of it in *Coordination of the Laws of Distribution* the following year.[21]

Wicksell's use of the marginal-utility-productivity theory calls for comment. While he stressed the limitations of marginal utility theory (the impossibility of interpersonal utility comparisons, the difficulties the marginal calculus encounters in commodities in joint demand, in goods produced in joint supply, and with goods that are large and indivisible relative to the individual's budget), he defended it decisively against its critics in an article, "Zur Verteidigung der Grenznutzentheorie," *Zeitschrift der gesammten Staatswissenschaften* (1900), pp. 577 ff. As we have seen, he was also at pains to extend its scope more directly to public finance as the underpinning for his system of "equitable taxation." At the same time he wanted to purify this theory from certain apologetic overtones that had become attached to it.

It is clear that the general equilibrium that arises in perfect competition represents an economic optimum of some sort, especially from the standpoint of production. Given the distribution of income, consumers maximize utility positions relative to ruling prices by spending so as to obtain equi-marginal utility per dollar. Producers maximize profit positions (at zero net profits in the long run) by arranging plant to optimal scale, producing the output quantities for which least average costs and marginal costs equal demand price. To do this, they use factors in proportions and quantities such that, given their prices, they obtain equi-marginal value (or revenue) product per dollar of factor outlay.

Walras and later Pareto, not to mention others (J. B. Clark, for

[21] For a verbal statement of the theorem, see *Über Wert*, pp. xii-xiii; Wicksell's mathematical treatment, *ibid.*, pp. 121-28, and *Lectures-I*, pp. 126 ff. This and Wicksell's rôle in the polemic about the theorem is expertly treated in G. J. Stigler's *Production and Distribution Theories* (1941), Chap. X, and Chap. XII.

instance), concluded that the foregoing equilibrium represented maximization of social welfare.[22] Wicksell objected that since interpersonal utility comparisons can not be made, it is impossible to ascertain which of many possible production-consumption equilibria indicate maximum social welfare. Secondly, the consumer maximization that arises in free competition is relative to (1) the competitively established structure of prices and to (2) the pre-existing distribution of income and wealth. It constitutes no guarantee that a different distribution, for instance, one favoring low income groups and achieved by authoritarian imposition of a set of uniform prices, will not yield a greater quantum of utility. For, as he pointed out:

> . . . in normal cases there can always be found a system of uniform prices at which exchange will produce a larger sum of utility than at competitive prices.[23]

Yet, these reservations notwithstanding, Wicksell remained at least a quasi-economic liberal in questions of intervention in "the system of competition" on behalf of increasing social welfare, for

> . . . an encroachment on free competition, if it is . . . (to increase social welfare) . . . must be effected *in the right direction.* Unrestricted liberty is infinitely to be preferred to a misguided system of restriction on competition.[24]

However, if this could be said by way of qualification of the marginal-utility-productivity theory on its home grounds, the stationary society of universal free competition, then far greater qualifications were in store for it in the real world where "our assumption of free competition is and can only be incompletely realized."[25]

B. *Theory of Price in Imperfect Competition*

Wicksell made only slight headway with the theory of imperfect competition because of his inadequate concept of the firm.[26] Nonetheless, using retailing as a form of imperfect competition short of

[22] L. Walras, *Abrégé d' Éléments d'Économie Politique Pure* (Paris, 1938), p. 105, from which a passage is quoted in *Lectures-I,* p. 74, note; V. Pareto, *Manuel d'Économie Politique,* pp. 354 ff., 617-31; K. Wicksell, *Über Wert,* pp. 48-50, *Lectures-I,* pp. 72-83, and his reviews of Pareto's works in *Zeitschrift für Sozialpolitik und Verwaltung,* Vol. VI (1897), pp. 159 ff., and Vol. XXII (1913), pp. 132 ff.

[23] *Lectures-I,* p. 80.

[24] *Ibid.,* p. 81.

[25] *Ibid.,* p. 72.

[26] In free competition all his firms were of optimal scale, and in simple monopoly he viewed them as entities for maximizing net revenue by making the proper output adjustment to demand functions of known elasticity. Yet he was aware of the connection between "economies of scale" and decline of competition, an insight he made little use of in particular equilibrium analysis.

monopoly, he anticipated some of the modern theory of monopolistic competition by showing that free entry in such conditions results in overcrowding—too many, less than optimal-scale retail firms for the good of retailers and their customers alike. He also attributed the existence of fairly fixed, differentiated retail markups to differentiation of firms, since consumers, unable accurately to judge quality of complex merchandise, become dependent on particular retailers as "buyer experts." Hence inelasticity of demand for retail services increases in proportion to the degree of consumer ignorance.[27]

Consideration of imperfect competition led him to delve into isolated exchange where his efforts led to an advance toward the theory of bilateral monopoly. At first (*Über Wert,* pp. 36 ff.), his position was similar to Edgeworth's—exchange ratios and quantities of goods traded at isolated barter are indeterminate within limits of the "contract curve." Decades later, 1925, in his review of Bowley's *Mathematical Groundwork for Economists,* he sensed an error in this theory. He went on to show that if a factor monopolist dominates in bargaining with an end-product monopolist who can not apply monopsony power, then even in bilateral monopoly, factor- and output quantities and prices are determinate. The factor monopolist attains a "real" maximum, and the end-product monopolist only a "relative maximum of normal returns." Thus the charmed circle of indeterminacy of bilateral monopoly was broken, albeit Wicksell was wrong, as Bowley pointed out in his reply, in holding that the converse case of end-product monopoly dominance was indeterminate.[28]

C. *Theory of Capital and Interest*

Wicksell's most important contribution to static analysis was his revision and reconstruction of Böhm-Bawerk's capital theory. He restated the latter solidly and lucidly on the basis of a stationary state and generalized it by (1) including land in its treatment, (2) introducing into it the assumption of variable production coefficients or factor proportions, and (3) by extending it beyond the confines of a one-commodity economy into a multiple-commodity general equilibrium treatment. As a result, Böhm-Bawerk's cumbersome trinitarian (the "three grounds") interest explanation was transformed into an explicit theory of interest as the marginal productivity of waiting, coordinate with the marginal productivity theories of wages and rent. In this

[27] *Lectures-I,* pp. 86-88.

[28] Wicksell's review, *Ekon. Tidskrift,* 1925, was translated as "Mathematische Nationalökonomie" for *Archiv für Sozialwissenschaft,* Vol. 58 (1927), pp. 252-81. Bowley's reply and re-analysis is found in "Note on Bilateral Monopoly," *Econ. Journal,* Vol. XXXVII (1928), pp. 651-65. For a systematic treatment of this entire topic, see W. Fellner, *Competition Among The Few* (New York, 1949), Chaps. IX and X.

connection, Wicksell also arrived on highly agnostic premises at the conclusion that saving is likely to be interest-inelastic.[29]

Yet, his chief innovation in capital theory was his elaboration of a new, consistent concept of capital structure, actually a method of quantifying real capital both (1) as a determinate time-structure of production capable of variation in two dimensions, "width" and "height," and (2) as a quantification in value terms, a conception he referred to as "the stratification of capital through time" (*Lectures-I*, p. 151). He developed it after first using Böhm-Bawerk's "production period," and later an improved, alternate construct of his own, the "weighted average investment period" (*Lectures-I*, pp. 172 ff.), which, however, was less clear than his structure concept.[30]

The value of Wicksell's formulation was that it made the impact of capital accumulation on the national dividend and on the relations of distributive shares more accessible than they were in earlier versions of "Austrian" capital theory and in "non-Austrian" conceptions of real capital as an aggregate of producers' goods. The essentials of this conception and of the insights it afforded may be sketched as follows.

In a perfectly competitive, stationary society, in equilibrium the quantity of real capital can be viewed genetically as consisting of labor-and-land inputs invested ("saved up") during past periods. The specific capital goods of which it is made up yield, "mature out," the services of their invested inputs in production over more or less long-time intervals or "maturation terms." Thus the capital structure can be expressed as (1) the number of invested inputs contained in it (or the number of such inputs required for its total replacement) times (2) the time-intervals such inputs must remain invested until they are used up, "mature their services," in production. Given the rates of wages, rent and interest, the value of the quantity of real capital can be obtained by multiplying these inputs by applicable wage and rent rates and by applying to each the rate of interest properly compounded for the maturation term each remains invested. Alternately, one can say that the value of a capital structure equals the sum of the properly discounted values of services its specific capital goods yield over future periods equal to their respective maturation terms.

Stationary conditions imply maintenance of the existing capital structure by replacement investment, which requires that a corresponding portion of society's total labor and land be thus "saved up" or invested in producing replacement goods, all its remaining labor-land being "current" factor services engaged in "direct" production of con-

[29] *Über Wert*, pp. 82-90; *Lectures-I* pp. 158 ff., 169, 171, 207, 209, 211 ff., and 241.

[30] The evolution of Wicksell's capital concept is readily traced in *Über Wert*, pp. 72-80, 93-94; *Finanztheoretische Untersuchungen*, pp. 29 ff.; *Interest and Prices*, pp. 122 ff., and *Lectures-I*, pp. 144-66, 172-84, 204.

sumption goods. If interest is 5% and real capital has a corresponding net marginal productivity, then since real capital is "saved up" labor-land, it follows that the marginal productivity of invested factor units must stand in the ratio of 1.05/1.00 to that of "current" factor units. And it is the lower marginal productivity of "current" labor-land that determines the rates of wages and rent.

In equilibrium, at 5% interest rate, the current gross marginal product of real capital, (*i.e.*, its "maturing" services), must for opportunity cost reasons be of a magnitude relative to that of labor-land input required for its replacement, of 1.05 raised by the power of an exponent expressing the maturation term (*e.g.*, in years) during which this current replacement input must remain invested before it, in turn, begins yielding services to production.[31] This was sometimes expressed by saying that capital goods of different maturation terms yield the services of their "oldest saved up" labor-land inputs, and that, in equilibrium, their respective net current yields must stand in a *compound rate relation* to each other, *e.g.*, net yields of .05, .1025, .1576 per unit for goods of one-, two-, and three-year maturity terms, respectively.

One additional property of real capital requires notice, namely, that current replacement input for long-maturity capital is a progressively smaller fraction of the current replacement requirement for the larger number of short-maturity capital goods that, taken in combination, have approximately the same yield. This means that if and when there is an advantage in shifting or converting some short-term into long-term investments, that advantage is reinforced by the fact that *after* the shift is completed, the total requirement of labor-land for replacement work is diminished.[32] Input units thus released from replacement production are then added to the "pool" of "current" factor units producing consumption goods, where they exert downward pressure on wages and rents since they increase the supply of such units, reducing their marginal productivity.

[31] Goods of one-year maturity term must have a current gross marginal product of 1.05 times, or per unit of, the corresponding replacement inputs; goods of two-year term, a current gross marginal product of $(1.05)^2 = 1.1025$ per unit of current replacement input; goods of three-year term, a gross marginal product of 1.1576 per unit of current replacement input and so forth. Deducting replacement, their respective net current yields or net marginal products are .05, .1025, and .1576 units.

[32] Three goods of one-year term each require 1.00 unit labor-land input per annum for current replacement. Their combined current replacement is 3.00 input units and their combined net current yield .15 units. One capital good of three-year term also requires 1.00 input units per annum for current replacement, and its net yield is .1576 units. *After* investment conversion to three-year goods is completed, the labor-land required for replacement is reduced by 2.00 input units per annum per new three-year goods created by the investment shift.

Now society becomes non-stationary in only one respect; its capital structure expands by net investment. This means that more units of labor and land, over and above those usually engaged in replacement work, are withdrawn from consumption goods production to make net new capital goods. This raises wages and rents as supply of "current" services is reduced and their marginal productivity rises, while supply of capital increases and its marginal productivity declines, perhaps by an absolute amount equal to 1% from 5% to 4%.

At first the capital structure tends to increase by *expansion in "width,"* which means that *net investment increases all its capital goods* of different maturation terms *proportionately*. The structure usually contains more units of short- than of long-maturity real capital, and a proportionate increase in all varieties then means a larger absolute increase in the former than in the latter. This *disrupts* the *compound rate relations* that existed between their current yields in the initial equilibrium *in favor of long-maturity capital*. Net yields were .05, .1025, and .1576 per unit before "width" expansion reduced them by an equal absolute amount to .04, .0925, and .1476 per unit for one-, two-, and three-year goods respectively. At these yields three-year and two-year goods are *relatively more profitable* than one-year goods, and this induces expansion progressively in the "height" dimension of the structure.

"Height" expansion means that (1) *further net investment is concentrated* more and more *on long-maturity goods, and* (2) *some pre-existing short-term investments are shifted* (by non-replacement and transfer of the corresponding current replacement inputs) *to long-maturity goods*. Accordingly, some labor and land previously engaged in replacement production is released to augment the supply of "current" factor services and exert counterpressure to the wage and rent rise that occurred during "width" expansion. Thus wages and rents recede somewhat and marginal productivity of short-term capital, hence interest, rises somewhat, perhaps from 4.0 to 4.5%. When all penultimate adjustments of numbers of capital goods of different maturity terms in the structure are made and net investment ceases, fully restoring equilibrium, then current net yields of capital goods of different terms will again exhibit the proper compound rate relation to each other, now of .045, .092, and .141 per unit for goods of one-, two-, and three-year terms, respectively.

This was the essence of Wicksell's insight into capital accumulation. Taken in conjunction with his analysis of "cumulative processes" in monetary theory, it gave rise to "capital shortage and vertical maladjustment" theses of business cycles, first propounded by one of his followers, G. Åkerman, in 1924, and later, more elaborately, by Pro-

fessor F. A. von Hayek.[33] While these theses were stimulated by, and were in a sense a logical outgrowth of Wicksell's work, we must emphasize that he did not share this perspective on business cycles, nor is it likely he would have concurred in the policy recommendations to which they gave rise.

V.—*Contributions to Economic Theory—Dynamic Analysis*

A. *Distributive Shares and the National Dividend in Conditions of Capital Accumulation and Technological Change*

Wicksell was the first among modern theorists to subject the question of relative and absolute distributive shares to rigorous analysis. His work was stimulated by reflections on Ricardo's famous chapter "On Machinery" and by Böhm-Bawerk's emphasis on lengthening the production period as a defense mechanism brought into action by rising wages.[34] Wicksell's treatment assumed a perfectly competitive society with a constant labor force and quantity of natural resources. His demonstrations showed the impact on the national dividend and on distributive shares of (1) net investment without technological change, (2) technological change without net capital formation, and (3) technological change and net capital formation proceeding chiefly in the "height" dimension of the structure. His conclusions may be expressed as follows.

Capital expansion in "width" and later, progressively, in "height," always increases the national dividend by the social marginal product of new capital. What happens to the distributive shares of capitalists, on the one hand, and of laborers-and-landowners, on the other, depends on the degree of capital intensity society has achieved, and on the downward (negative) acceleration of the marginal productivity of real capital. If capital intensity is small, both the relative and absolute share of capitalists rises, while the absolute share of labor-land also rises, though more slowly. With slight capital-intensity marginal productivity of capital can not have proceeded far into the stage of diminishing returns, and so the interest rate declines only slightly with net accumulation. But, *ceteris paribus*, accumulation eventually makes society capital intensive. Then the relative and absolute shares of labor-land increase; the relative share of capital declines, its absolute share continuing to increase slowly.

His analysis of technological change in the absence of net accumulation was a refutation of the Ricardian dictum that adoption of labor-

[33] G. Åkerman, *Realkapital und Kapitalzins*, Vol. II (Stockholm, 1924), and F. A. von Hayek, *Prices and Production* (1934), *Profits, Interest, and Investment* (1939), and *The Pure Theory of Capital* (1940).

[34] *Über Wert*, pp. 101-5; 113-16, and *Lectures-I*, pp. 133-44; 163-66.

saving machinery proceeds regardless of whether the national dividend declines in the process, as long as its adoption is profitable to entrepreneurs. Wicksell showed that technological improvement always increases the national dividend as long as perfect competition prevails. For it increases the average productivity of the factors though not necessarily the marginal productivity of all factors equally. For instance, it may increase that of land more than that of labor and lead to much labor displacement and hardship as land is progressively substituted for labor. But labor displaced by conversion of acreage from grain to pastoral agriculture will offer itself at competitively lower wages and so make grain farming more profitable than it was. This prevents full conversion of acreage into sheep-runs and intensifies cultivation on remaining grain farms. *Ergo,* the national dividend increases and contains more mutton as well as bread with, probably, some wool for export. Yet, he conjectured, most inventions raise the productivity of both labor and land and thus prevent a serious decline in labor's absolute share.

As net accumulation proceeds, labor and land constant, it proceeds progressively in the "height" dimension because long-maturity investments become *relatively* more profitable as wages and rents rise. This retards but can not stop the rise in wages and rent and the decline in capital's relative share. However, if at the same time some technological improvements occur, then, as he said:

> . . . the position is different *where,* as may easily happen, *some technical invention renders long-term capital more profitable (absolutely) than previously.* The consequence must necessarily be—so long as no further capital is saved—a diminution in the "horizontal dimension" and an increase in the "vertical dimension," so that the quantity of capital used in the course of the year will be reduced; an increased quantity of current labor and land will consequently be available for each year's direct production; and, although this need not necessarily cause their marginal productivity and share in the product to be reduced—since the total product has simultaneously been increased by the technical discovery—yet a reduction may clearly result. *The capitalist saver is thus, fundamentally, the friend of labor, though the technical inventor is not infrequently its enemy. . . . That the transformation of circulating into fixed capital, i.e. the change from short-term to long-term investments, may frequently injure labor is beyond doubt.*[35]

Thus technological change, if it enhances the marginal productivity of long-term investments *absolutely,* is likely to reverse the downward trend of the interest rate and the rise in wages and rents that otherwise follow from net accumulation with labor and land constant.

[35] *Lectures-I,* italics supplied, p. 104.

The foregoing shows clearly that Wicksell anticipated by almost three decades several of the conclusions of J. R. Hicks in *Theory of Wages* (1932). Hicks acknowledged his indebtedness to Wicksell's work. To see how close the connection is, one need only recall Hicks's suggestive theory of inventions. It strikes us that Hicks's induced (labor-saving) inventions that would have been profitable without an antecedent change in relative prices (*i.e.*, rise in wages, decline of interest) come to the same thing as Wicksell's "technical invention that renders long-term investment more profitable (absolutely) than previously."[36]

For all the progress Wicksell made with the shares-problem, one aspect of it invites criticism—namely, his constant treatment of it on the assumption of perfect competition, which is useful only for dealing with technologically stationary societies of atomistic enterprise. Once the scene shifts to technologically progressive societies, the problems of large-scale enterprise and imperfect competition inevitably intrude themselves into the analysis. Yet he was well aware of the relation between decline of competition and economies of scale in dealing with the product-exhaustion problem (*Lectures-I*, pp. 126-29, 131, 133). If Wicksell had also pursued his distributive shares discussion on the assumption of imperfect competition, then he might have discovered that oligopolistic market structures are apt to bring forces into existence which threaten the very source of technological progress in the interest of protecting existing investments against obsolescence. It was undoubtedly for lack of a developed theory of the firm that he was unable to effect this integration, in itself not far to seek, between his observations concerning imperfect competition in "value theory" and those of his "theory of distributive shares."

B. The Wicksell Effect

In his distributive-share analysis Wicksell stressed a force which is a partial offset to the decline of interest under continuous net accumulation, a phenomenon also observed by the classical economists, especially J. S. Mill, in their speculations concerning the tendency toward a zero interest rate and, presumably, a stationary society. This was the observation that a certain portion of net real saving is absorbed in rising real wages and rent during an interval of capital formation. This seemed a strong guarantee against a zero interest rate, for rising wages and rent could be expected to absorb enough net saving to prevent creation of the quantity of capital that would drive its marginal productivity to zero. Wicksell was rather preoccupied, in three separate

[36] J. R. Hicks, *Theory of Wages*, pp. 121-27.

demonstrations, with this partial-wage-absorption of saving, so much so that we label it the "Wicksell effect."[37]

He used his demonstrations as an argument against the full applicability to the factor real capital (at both the macro- and the micro-economic level) of "Thünen's law," as he used to call the marginal productivity principle. An increase in real capital, like that of any other factor, augments output by an increment, the social marginal product of capital. If we divide this output-increment by the net real saving that was destined and accounts for the increase in real capital, we obtain the "social marginal productivity rate" of real capital. Now if Thünen's law is to apply, this rate must equal the rate of interest ruling at the end of the period of net capital formation. Actually it does not, for the social marginal productivity rate of capital is somewhat smaller than the interest rate in proportion to the extent to which rising wages and rent have absorbed some of the net saving. The interest rate, on the other hand, is determined by the marginal productivity of the somewhat smaller quantity of real capital that was created. Now, *per contra,* if society's labor force (or its land) increases, other factors constant, the resulting social marginal product when divided by the labor increment gives us its social marginal productivity rate which, since no similar absorption of labor power has occurred, equals the rate of wages (or rent) at the end of the interval of labor increase. Thus Thünen's law applies fully to labor and land and their remuneration, but it applies to real capital only at the private or micro-economic level.

There were difficulties with Wicksell's argument and proofs, matters we can not enter on here, yet he was substantially right about his "effect" being a phenomenon uniquely associated with changes in the factor real capital. His stress on it was effective in the sense that his proofs were a first attempt which gave rise to a succession of more effective ones to study the process of capital formation in detail.

Essentially, the Wicksell effect points to a host of problems connected with adjustments between the capital structure and (1) changes in income distribution, (2) changes in magnitude and composition of total output (relatively more or less capital goods or consumption goods when total output varies), and (3) changes in income dispositions of individuals (saving versus consumption when income varies) that are called forth by variations in the capital structure itself. These are ad-

[37] J. S. Mill, *Principles of Political Economy,* Ashley edition, pp. 67-68, 79-90, 713-14. Wicksell's demonstrations occur in *Über Wert,* pp. 112-14; *Lectures-I,* pp. 177-80, and in his review of G. Åkerman's *Realkapital und Kapitalzins,* Vol. I (1923), in *Ekon. Tidskrift* (1923), a review now translated and appended to *Lectures-I,* where wage-absorption-of-saving is discussed verbally, pp. 269 ff., and mathematically, pp. 291 ff.

justments which seem to be required to maintain equilibrium or to prevent the "vertical maladjustments" that von Hayek stresses. As such, the Wicksell effect at the real level is a force opposed to that of "forced saving" at the monetary level of analysis in his cumulative processes. If Wicksell had juxtaposed these two forces on a common plane of discourse, he might have arrived at a capital-structure-maladjustment thesis somewhat similar to von Hayek's. For it can be shown, though we must refrain from the attempt here, that von Hayek's vertical maladjustment," or, in the later versions of his thesis, his "Ricardo effect," represents the swamping of the Wicksell effect that must occur by the increasing momentum of "forced saving" in the upward cumulative process.[38]

C. *Monetary Theory*

Undoubtedly, Wicksell's greatest contribution lies in the field of monetary theory. During the years 1898-1915 he became the founder of modern monetary analysis. He originated the aggregate demand-supply approach—emphasizing especially the relation of investment to savings—to changes in value of money and associated changes in tempo and scope of economic activity which find expression in fluctuations of price levels, income, and employment. This is not to say that he had an explicit theory of income and employment in the sense of the contemporary "Stockholm" and "Keynesian" schools, for, *inter alia,* he had no clear understanding of the consumption function and its impact on the determination of income. Yet, and herein lies perhaps his greatest merit, he developed the all-essential analytic framework within which these and other "schools" have generated their theories by using substantially the same variables he used, but assigning different values or rôles to them and dismantling some of his restrictive assumptions concerning perfect competition, perfect foresight, and so forth.

Wicksell acknowledged an intellectual debt to the participants of the bullionist controversy at the opening of the 19th century and an even greater debt to those, especially Thomas Tooke, who carried it on at mid-century as the currency-banking school polemic and in the debates surrounding the passage of the Peel Acts. They, together with Marshall and I. Fisher, may be regarded as his forerunners.[39] For it is still true that when Wicksell began his work, monetary theory was confined to

[38] *Cf.* the writer's doctoral thesis, *Knut Wicksell—A Study in Economic Doctrine,* pp. 276 ff., 290-97 (University of California, 1950).

[39] The relation of Wicksell's to earlier monetary doctrine has received attention by F. A. von Hayek in *Production and Prices,* pp. 1-32, and in Alvin Hansen's *Monetary Theory and Fiscal Policy* (1949), Appendix A and Chaps. 3 and 6, respectively. We should also mention that when D. Davidson pointed out to him, in a note in *Ekonomisk Tidskrift* (1916), that Henry Thornton had expressed a thesis akin to that of *Interest and Prices* in his treatise *Inquiry into the Nature and Effects of the Paper Credit of Great Britain* (1802), pp. 283 ff., Wicksell was delighted and surprised to find that ideas akin to his own

varied expressions of the simple quantity theory. Apart from his own contributions, it remained in much the same state in the rest of the world until the 1920's, as is indicated by the success of I. Fisher's work, *The Purchasing Power of Money* (1911), and a second edition as late as 1922.

Monetary discussion was mainly devoted to questions of currency reform, mono- versus bi-metallism, and these versus "tabular" standards of value. Even Marshall with his insight into "real balances" as a prime constituent of the demand for money and his stress on the need for exercise of "bank rate" to restrain speculators and forestall panics, did not transcend the traditional concern over currency standards and the mechanism of payments.[40] In all fairness it can be said that with Marshall and Fisher the problem of value constancy of money was reduced to finding ways and means to make investors reckon in real terms and to bar "speculative" as distinct from "sound" investment. But in their systems there was no direct path from the elasticity and quantity of currency to the forces that act on individual income dispositions and on entrepreneurial production decisions. Keynes, who professed to labor in the Marshallian tradition, belatedly came to recognize this as is shown by his assessment of Marshall's and Wicksell's respective efforts in monetary theory.[41] Since we have already dealt with Wicksell's proposals for reform of monetary institutions, we proceed here to his apparatus of monetary analysis.

1. *Wicksell's Concept of Money and Credit.* In his criticism of the "simple" quantity theory, Wicksell made it clear that monetary analysis must proceed in short-run defiance of Say's law by means of an aggregate demand-supply approach.

> Every rise or fall in the price of a particular commodity presupposes a disturbance of the equilibrium between the supply and demand for the commodity. What is true in respect of each commodity separately must doubtless be true of all commodities collectively. A general rise in prices is therefore only conceivable on the supposition that the general demand has for some reason become, or is expected to become, greater than the supply. . . . Any theory of money worthy of the name must be able to show how and why monetary or pecuniary demand for goods exceeds or falls short of the supply of goods in given conditions.[42]

were "ancient" enough to antedate Ricardo's writings. This may serve as a reminder to those who regard Wicksell as a "rediscoverer" of Thornton's work, for instance, Professor E. Whitaker in *A History of Economic Ideas*, p. 701. Wicksell's work was evidently done independently and in ignorance of that of Thornton. If anyone is to be credited with rediscovering Thornton, perhaps the honor should go to D. Davidson.

[40] A. Marshall, "Remedies for Fluctuations in General Prices" (1887), reprinted in *Memorials of Alfred Marshall* (1925), pp. 188-211.

[41] J. M. Keynes, *A Treatise on Money*, Vol. I (1930), pp. 186, 192-93, and 198.

[42] *Lectures-II*, pp. 159-60.

For his purposes, a question of the conditions for value constancy of money and of the causes and consequences of its fluctuation in value, he adopted the following general concept of money:

> . . . money is a quantity in two dimensions, quantity of value, on the one hand, and velocity of circulation, on the other. These two dimensions multiplied together give the "efficiency" of money (a term due to Helfferich) or its power to facilitate the turnover of goods in a given period of time.[43]

This expresses the left side of the Fisher equation of exchange, MV. Although Wicksell studied the forces that account for variation in V, the reciprocal of the extent to which "value storage" occurs in the form of money, his analysis of V was neither complete nor fully integrated with the rest of his system. Briefly, it amounted to an income velocity explanation of the rate of turnover of cash balances.[44] Yet his study of velocity led him to a fruitful insight, that the influence of credit on currency "may under all circumstances be regarded as accelerating the circulation of money," *i.e.*, increasing its "virtual velocity" (*Lectures-II*, p. 67).

From this he concluded that in a "pure cash" economy V is practically a constant, and the old quantity theory holds without qualification. At the other extreme, a "pure credit" economy (one where checking accounts have almost entirely replaced currency and where the total amount of deposits is fully subject to the policy discretion of the central bank), this V becomes a variable magnitude which may, potentially, approach infinity. Here the "supply of money" is perfectly elastic, and, subject to the central bank discount rate, adapts itself perfectly to the demand for money. Accordingly, he conducted most of his monetary analysis on the assumption of a "pure credit" system for a closed economy. This gave him a great advantage in generalizing his treatment by relegating particular monetary institutions into the background, and, as Ohlin put it, thus "escaping from the tyranny that the concept 'quantity of money' has exercised over monetary theory."[45]

2. *Wicksell's Theory of Monetary Equilibrium and his Norm for Monetary Policy*. Wicksell's apparatus of monetary analysis can be indicated as follows. Aggregate demand consists of money income spent for consumption and money income saved. Aggregate supply has two corresponding categories of goods, output of consumption goods and of capital goods. Changes in the value of money or in the price level must

[43] *Ibid.*, p. 19.

[44] The quantity of money is the sum of cash balances; the demand for money is a demand for cash balances. The latter has several constituent elements, the most variable of which is a demand for balances to accommodate accumulation of savings which are not simultaneously absorbed in investment; *cf. Interest and Prices*, Chap. 6, and *Lectures-II*, pp. 59 ff.

[45] B. Ohlin, in his "Introduction" to *Interest and Prices*, p. xiv.

be determined by the interaction of these variables. Savings enter the money market as a supply of investable funds, where, if banks do not indulge in net creation nor in net destruction of deposits, they become available at a loan rate which equates entrepreneurs' investment demand for them to their supply. Investment demand is determined by the "real rate of interest," *i.e.*, by the "expected yield on recently created real capital," the analogue of marginal efficiency of capital. The monetary equilibrium that arises when the loan rate equals the real rate was expressed in this manner:

> The rate of interest at which the *demand for loan capital and the supply of savings exactly agree,* and which more or less corresponds to the expected yield of the newly created real capital, will then be the normal or natural real rate. It is essentially variable. If the prospects of employment of capital become more promising, demand will increase and will at first exceed supply; interest rate will then rise and stimulate further saving at the same time as the demand from entrepreneurs contracts until a new equilibrium is reached at a slightly higher rate of interest. At the same time equilibrium must *ipso facto* obtain—broadly speaking, and if not disturbed by other causes—in the market for goods and services, so that wages and prices will remain unchanged. The *sum* of money incomes will then usually exceed the value of consumption goods annually produced, but the excess of income—*i.e.*, what is annually invested in production—will not produce any demand for present goods but only for land and labor for future production.[46]

This equilibrium may be disrupted in several ways by his famous "cumulative processes." The real rate and investment demand are highly variable because expected yield of capital is affected by innovation, population growth, opening of new markets, etc. For one of these reasons the real rate rises while the loan rate remains constant. Investment demand rises above the concurrent supply of voluntary savings, but the deficiency is made up by net deposit creation within the pure credit system. Rising investment demand has begun raising prices on capital goods and shifts the distribution of augmented money income in favor of entrepreneurs. The latter, anxious to expand investment on roseate profit prospects, compete for labor and land fully employed elsewhere, and succeed in attracting some of these resources away from consumption goods production at a rise in wages and rents. Thus output of consumption goods declines somewhat while money income and consumption spending of workers and landowners increases. Hence consumption goods' prices rise, and their rise makes profit prospects in capital goods industries even brighter. This induces further expansion there at another rise in wages and rents with further curtailment of consumption output and a subsequent new rise in their prices, etc. This process might go on indefinitely until hyperinflation ends in a

[46] *Lectures-II*, p. 193.

crisis in the course of which the loan rate is raised. It may be raised above the level of the real rate with consequences of cumulative deflation, or it may be raised to equal the latter in which case a new equilibrium arises, most likely at prices that are somewhat higher than in the initial situation.

Wicksell did not insist that cumulative processes necessarily must terminate in crises of hyper-inflation or deflation; nor did he exclude the possibility they may set in motion forces that eventually generate a new equilibrium without crisis. He was content to have demonstrated that the discrepancy between the rates "... is enough to explain actual price fluctuations which manifestly cannot be due to variations in the quantity of gold ... ," (*Lectures-II*, p. 200).

But even in a pure credit system, the banks are not in a position to know the vagaries of the real rate. Yet he insisted their primary duty is to give money value-constancy, *i.e.*, to stabilize the price level. The means to that end is for them to vary the loan-rate in the same direction as the drift of the price level away from its normal index level of 100. The result would not be perfect price stabilization but price fluctuation narrowed to a much smaller range than in the past. Moreover, in conditions short of a pure credit system, he was fully aware the banks can not effectively stabilize the price level by interest rate policy if large, autonomous changes in money quantity occur (for instance, gold in- or efflux for a particular country; for the world as a whole, a sudden rise in gold production or its cessation altogether; or if governments engage in heavy deficit finance and/or fiat issues, or their opposites). But the gold complications were presumably remediable by his international clearings system and the effective demonetization of gold, and, except in times of war, there should be no occasion for serious interference with price stabilization from the side of government finance.

3. *Modification of the Monetary Policy Norm—The Wicksell-Davidson Polemic.* His prescription of price stabilization as the norm for monetary policy rested on a tacit assumption which Davidson was quick to discover. This led to a polemic between the latter and Wicksell in *Ekonomisk Tidskrift*, 1906-1909. While Davidson had the better part of the argument, the issues between them were never properly joined because of the crabbed manner in which both of them argued.[47]

Davidson's point was that price stabilization is only consistent with maintenance of equilibrium if productivity is constant, but if the latter changes, the proper norm is to let prices vary roughly in inverse proportion to the change in productivity. We have initial equilibrium and productivity rises, which means the real rate rises, hence the banks should raise the loan rate accordingly. If this is done, money income

[47] This polemic has been sketched by B. Thomas in "The Monetary Doctrines of Professor D. Davidson," *Econ. Journal*, Vol. XLV (March, 1935).

remains constant, but increased productivity means larger output which must then be sold at declining prices. Now, if the banks insist on stabilizing prices, then they must reduce the loan rate to prevent the price decline. If so, the loan rate becomes "too low" and lays the basis for an upward cumulative process. For reduction of the loan rate means net deposit creation and an increase in factor payments proportionate to the rise in productivity. This increase in factor incomes is not likely to be divided between saving and consumption in the same proportion as the increase in output is composed of consumption and of capital goods. Most of the extra money income may be spent for consumption at a rise in consumption goods' prices which becomes the basis for an upward process.

It was years later, 1925, after Sweden had tasted severe inflation during World War I, and after Davidson had published the substance of his own monetary analysis in articles in *Ekonomisk Tidskrift*, 1918-23, that Wicksell conceded the strength of his argument. His concession came as an admission that banks can not effectively prevent the inflation that results from "commodity scarcity," *i.e.*, from the equivalent of a decrease in productivity, caused by blockade and other dislocations of warfare.[48] Yet Wicksell did not abandon price stabilization as an imperfect, but to his mind the only practicable criterion for monetary policy. In a peaceful world, he argued, there would be no war-caused "commodity scarcity" nor any other occasion for inflation due to precipitate "decrease in productivity." As for "increase in productivity," he averred such increases are of small scale and are a secular force that does not seriously distort equilibrium relations in the short run. As for Davidson's norm, to let prices vary inversely with changes in productivity, he thought it a counsel of perfection and pointed to the pervasiveness of imperfect competition to block its adoption. Thus he was convinced the practical choice lay between his own norm and no definite norm at all.

4. *Major Characteristics of Wicksell's Monetary Analysis.* Looking back on the foregoing, the salient features of Wicksell's innovation in monetary theory may be summarized as follows:

a. His explanation of cumulative price level fluctuations reversed the alleged relation between changes in money-quantity and the price level as expounded in the quantity theory. It was generally the other way around; the price level rises or falls without corresponding change in money-quantity or in output, but its fluctuation causes a corresponding change in velocity of circulation of money. In the absence of (1) large, autonomous changes in money-quantity (due (i) to the *modus operandi* of the gold standard, or (ii) to major changes in government finance),

[48] For evidence of this concession see *Interest and Prices*, pp. 201, 204-05, 213-15, where one of Wicksell's last articles, "The Monetary Problem of the Scandinavian Countries," originally published in *Ekon. Tidskrift* (1925), has been translated and included as an appendix.

and in the absence of (2) large, autonomous changes in productivity, price level fluctuations were caused by a divergence between real and loan rates of interest.

b. The driving force behind the movement of prices was a variable investment demand functionally related to the real rate, which latter varies in response to the impact of "real forces," such as innovation, population growth, and so forth.

c. The variability of investment demand implied short-run divergence between aggregate demand and supply. For consumption demand (aggregate income minus saving), does not readily shift out of equilibrium with the supply of consumption goods *except as* total income changes. Hence changes in income were primarily due to a divergence between investment and savings.

d. A moving price level with its attendant changes in circuit velocity of money implies a change in the magnitude and distribution of total money income, and a "forced" change in the allocation of real income between consumption and formation of real capital, a phenomenon which in his day was expressed by the conception of "forced saving" and its opposite.

e. Maintenance of monetary equilibrium and its restoration after disruption was entirely placed on the adjustment powers of central bank discount or interest policy. Optimistically, he considered such policy equally capable or arresting and reversing a deflationary price movement as he, more realistically, thought it capable (in the absence of gold standard, or fiscal interference, or drastic productivity change) of arresting and reversing an inflationary price movement.

f. His analysis proceeded on assumptions of (i) a closed economy with a pure credit system, with (ii) perfect competition on all markets, (iii) high mobility and full utilization of resources, and (iv) near-perfect foresight for all except central bank directors who, because of their deficiency in this regard, must be guided by rational norms of monetary policy.

5. *Transformation of Wicksell's Heritage of Monetary Theory: The Rise of the "Stockholm School."* Shortly after his death, Wicksell's heritage of monetary theory and also that of Davidson, underwent a searching exegesis and expansion by the efforts of younger economists in Sweden, notably Professors Lindahl, Myrdal, and Ohlin, whose labors gave rise to the vigorous, contemporary "Stockholm School." We can not enter into this interesting development here, but it may be useful to point out the primary transformations Wicksell's heritage has undergone in this process.[49]

[49] The rise of the "Stockholm School," 1927-35, is related in Ohlin's article, "Some Notes on the Stockholm Theory of Saving and Investment," *Econ. Journal* (1937), reprinted in *Readings in Business Cycle Theory* (1944), pp. 87-130; *cf.* further the well-known works of E. Lindahl, *Studies in the Theory of Money and Capital*, and G. Myrdal, *Monetary Equilibrium* (1939).

Lindahl and Myrdal approached the Wicksellian heritage in the conviction that entrepreneurial anticipations are the strategic factor to which most other economic variables respond. Each selected a more refined technique of analysis than Wicksell had used. Lindahl entered on a sequence or intertemporal equilibrium analysis, and Myrdal used a complementary technique of disequilibrium analysis, the *ex ante, ex post* method. The former attempts to find the conditions that influence and determine the direction of entrepreneurial anticipations and then seeks for criteria for policy that will elicit the kind of entrepreneurial behavior that tends to maintain or restore economic stability. The latter asks how, with the *ex post* data on which analysis must proceed, shall we be able to tell whether anticipations have been consistent *ex ante,* and if not, in which direction from *ex ante* equilibrium are we drifting? In both cases a systematic study was made of the Wicksellian apparatus under more realistic assumptions than he had used, assumptions of imperfect competition, imperfect foresight, underutilization of resources, and so forth. Some characteristic conclusions are as follows.

The significant variable, investment *ex ante,* is determined by entrepreneurial anticipations, and it in turn accounts for changes in income, and, via the latter, for the adaptation of savings (by *ex post* gains or losses) to the rate of investment. Since factor prices are not very flexible, income fluctuations account for variations in employment. Thus fluctuating income levels take the place of Wicksell's fluctuating price levels as the important variable. For the price level adapts itself to changes in income, and in adapting itself it effects changes in distribution of income, just as in Wicksell's case it was the quantity of money that adapted itself to the movement in the price level and affected income distribution in that process.

Monetary equilibrium or equality between *ex ante* investment and saving is compatible with price movements provided they are not cumulative and unilateral. It is also compatible with and conditioned upon human and other resource underutilization to a degree corresponding to the extent of market imperfection. Here a price-structure underemployment equilibrium emerges as an alternate to Keynesian underemployment equilibrium based on interest-inelastic investment demand and on a minimum level of interest rate determined by infinite elasticity of liquidity demand for cash balances.

In maintaining and restoring equilibrium, interest rate policy can be of service, for instance, in adapting flexible prices (capital values) to changes in inflexible prices (wage rates), but it can not guarantee full employment. Its rôle is rather one of removing monetary causes of instability and of adapting the money and credit structure to nonmonetary causes of economic change. The latter must generally be dealt with by nonmonetary measures.

Because of imperfect competition and the coexistence of flexible

and inflexible prices, interest changes by themselves are likely to be ineffective in achieving a sufficient approach to economic stability. Therefore, monetary policy requires coordination with other policy, especially with fiscal policy. Moreover, interest rate reduction in depression is unlikely to suffice for initiating recovery. The latter depends more on maintenance of consumption at some level not far below its average level, for instance, by means of public expenditures for social security, unemployment benefits and by private disinvestment. Cushioning of consumption and deferral of replacement investment during the downturn are together likely, after some time, to raise *ex ante* investment demand above the reduced rate of *ex ante* saving and thus provide a basis for recovery.

These and other insights, made available by the intensive and comprehensive work of the Stockholm School, indicate, however sketchily, some broad features of the transformation of the Wicksellian heritage.

VI.—*Conclusion: A Comment on Wicksellian Economic Philosophy*

Perhaps it is fitting to close this paper with a general remark about the economic philosophy of Wicksell and his followers. That philosophy may be characterized as experimentalist on the positive side and as devoid of orthodoxy on the negative side. Neither he nor his followers have been imbued by strong preconceptions in favor of *laissez faire* systems. They were willing to bid the "unseen hand" farewell and place increasing reliance on deliberate, rationally conceived economic policy as constituting the best prospect for achieving greater stability and internal harmony in the economy. Because their outlook was focussed on, and to some extent enabled them to anticipate, the course of economic change, it avoided doctrinaire allegiance to particular positions and opposition to all others that has vitiated much of the reasoning among various "schools" outside as well as inside the Marxist camp.

It is readily granted that such a frame of mind *per se* is no guarantee against errors and bias in analysis, nor against selection of less-than-best policy alternatives. Yet it preserves and widens the scope for such objectivity as is possible in social science. It conduces to an open-mindedness, a willingness to generate and test new approaches, including a certain readiness to take calculated risks where the *a priori* yields no unique answer. Needless to say, such a philosophy, which is the *essence* of the Wicksellian heritage, for all its adaptibility does not lack for method and rigorous discipline. Yet, its success seems to rest on its having avoided making a straight-jacket out of discipline and on its having been able to distinguish between its assumptions and reality.

ISSUES OF BUSINESS CYCLE THEORY RAISED BY MR. HICKS

By Sidney S. Alexander*

In *A Contribution to the Theory of the Trade Cycle*[1] Mr. Hicks has presented a simple theory of the business cycle, based on his own recombination of elements previously recognized. These elements are primarily the interaction of the accelerator and the propensity to consume, subject to lags, and a ceiling on the rate of increase of production at or near full employment. The accelerator expresses the tendency for investment, or possibly disinvestment, to be induced by changes in the level of income or production. In its simplest form it is the ratio of the amount of investment so induced to the change of national income which induced it. From a sophisticated viewpoint the accelerator may be regarded as a more complicated description of the manner in which investment or disinvestment is influenced over time by changes in the level of national income or of its components. The propensity to consume expresses the tendency for the level of consumption to depend on the level of income. In its simplest form the marginal propensity to consume is the ratio of the additional consumption expenditure associated with a given additional amount of income to that additional income. More generally the term propensity will be used in this discussion to cover the dependence of the rate of expenditure on the level of income, the term accelerator, to denote the dependence of the rate of expenditure on changes in the level of income.

The accelerator has long been used in the explanation of certain phases of the business cycle,[2] but its rôle as a possible generator of cumulative movement was not fully recognized until it was combined with the Kahn-Keynes multiplier.[3] As Mr. Hicks has observed, it is

* The author is acting chief of the Finance Division, Research Department, International Monetary Fund.

[1] J. R. Hicks (Oxford, 1950).

[2] *Cf.* Albert Aftalion, *Les Crises Periodiques de Surproduction* (Paris, 1913), and J. M. Clark, "Business Acceleration and the Law of Demand," *Jour. Pol. Econ.*, Vol. XXV, No. 3 (March, 1917).

[3] R. F. Harrod, *The Trade Cycle* (Oxford, 1936), and Paul A. Samuelson, "A Synthesis of the Principle of Acceleration and the Multiplier," *Jour. Pol. Econ.*, Vol. XLVII, No. 6 (1939), and "Interactions between the Multiplier Analysis and the Principle of Acceleration," *Rev. Econ. Statistics*, Vol. XXI, No. 2 (May, 1939), reprinted in *Readings in Business Cycle Theory* (Blakiston, Philadelphia, 1944).

noteworthy that Keynes failed to combine the accelerator with the propensity. In his notes on the trade cycle (*General Theory,* Chap. XXII) Keynes did in fact mention the influence of changes in the level of income and employment on the marginal efficiency of capital, and hence on the rate of investment, but laid no great stress on this factor. Rather, he emphasized a collapse of expectations as initiating the downturn through its effect in discouraging investment. The accelerator was credited with helping on the upturn as soon as excess inventories are worked off, since production must then be raised to meet current consumption which, during the downswing, was partly met out of inventories. Furthermore, Keynes' brief dictum that "when once the recovery has been started, the manner in which it feeds on itself and cumulates is obvious," may be interpreted as implying the interaction of accelerator and multiplier on the upswing.

Although these glimmers of the interaction of the accelerator and propensity can be found or inferred in the *General Theory,* it remained for Mr. Harrod to incorporate this interaction into a thoroughgoing theory of the business cycle which appeared close on the heels of the *General Theory.* Mr. Harrod pointed out that if, for the community as a whole, the propensity to consume is constant, *i.e.,* the marginal propensity is equal to the average,[4] and if there is a constant accelerator equal to the average proportion of capital to income, then a steady rate of advance of income would be possible.[5] Thus, suppose that the national income is at $100 billion, total productive assets are at $200 billion, the marginal (equal to the average) propensity to save is 10 per cent, and the accelerator on an annual basis is equal to 2 or the ratio of the total stock of productive assets to annual income. That is, a $1 increase in annual income produced induces additional net capital formation of $2. Under these conditions, in the absence of lags, a steady rate of advance at 5 per cent per year would be possible. For in the year under consideration that would involve savings of $10 billion and investment of $10 billion, and in the next year a national income of $105 billion with saving of $10.5 billion and investment of $10.5 billion, etc. So long as these conditions of constancy of propensity and accelerator hold, a cumulative upward movement is possible with investment balancing savings at all levels of income attained. Mr. Harrod then explained the business cycle on the assumption that the foregoing conditions of constancy of propensity and accelerator did not hold. In short, in *The Trade Cycle* Mr. Harrod used the interaction of propen-

[4] In his presentation this condition was expressed as the two conditions that (i) representative income savers save the same proportion of the increment of income as previously and (ii) there is no shift to profit.

[5] *Trade Cycle,* p. 90. Less stringent conditions actually would suffice.

sity and accelerator to explain cumulative movements but relied on changes of the coefficients to explain the turning points.

In 1939 Samuelson[6] pointed out that the combination of the accelerator and the propensity could, provided lags between income and consumption and investment were taken into account, lead not only to steady growth but also to cycles or to a gradual approach to an equilibrium value, depending upon the magnitude of the coefficients of acceleration and consumption involved. Tinbergen also developed a model that was formally similar, explaining the movement of nonwage income.[7] In Tinbergen's model, however, the term corresponding to the accelerator was introduced via the influence of speculative profits on consumption outlay, and the propensity to consume through the assumption that wage earners consume all their income and profit recipients part of their income. Models similar to Samuelson's in mathematical form but differing in substance had previously been developed by Frisch[8] and Kalecki,[9] whose models do include the accelerator but not the propensity to consume. Harrod's and Samuelson's models are distinguished from those of Tinbergen, Kalecki and Frisch in that they contain both propensity to consume and accelerator, while the other models have one or the other element, but not both. As compared with Harrod's approach, Samuelson's model, through the introduction of lags, indicates that cyclical behavior can be generated even if propensity and accelerator remain constant.

In 1939 Harrod advanced an extension of his arguments in *The Trade Cycle,* seeking to establish, among other things, "that the trend of growth may itself generate forces making for oscillation."[10] He called that rate of steady growth which would just keep saving and investment in balance, as indicated in the example above, the warranted rate of growth.[11] He pointed out, however, that the warranted rate of growth would be unstable in the sense that if in any period income should be changing at a rate different from the warranted rate of growth subsequent rates of growth would diverge more and more from the warranted rate.

[6] See footnote 3.

[7] *Statistical Testing of Business Cycle Theories. II, Business Cycles in the United States of America, 1919-9132* (Geneva, 1939).

[8] "Propagation Problems and Impulse Problems in Dynamic Economics," *Economic Essays in Honour of Gustav Cassel* (London, 1933).

[9] "A Macrodynamic Theory of Business Cycles," *Econometrica,* Vol. 3, No. 3 (1935).

[10] "An Essay in Dynamic Theory," *Econ. Jour.,* Vol. XLIV, No. 193 (March, 1939), p. 15. In fact, however, his theory accounts for cumulative movement but not for oscillation.

[11] Domar, "Expansion and Employment" *Am. Econ. Rev.,* Vol. XXXVII, No. 1 (March, 1947), developed a similar concept.

Mr. Harrod also introduced the concept of the natural rate of growth, "the maximum rate of growth [of income produced] allowed by the increase of population, accumulation of capital, technological improvement and the work/leisure preference schedule, supposing that there is always full employment in some sense."[12] If the natural rate of growth is below the warranted rate, then the warranted rate cannot be sustained once full employment is reached, and not even the natural rate can then be sustained. At rates of growth less than the warranted rate of growth subsequent rates of growth will be lower, and will eventually lead to declining income. Therefore, if the natural rate of growth is less than the warranted rate, there will be a chronic tendency to depression.

Mr. Hicks has adopted, with modifications that cannot be regarded as essential, the Samuelson mechanism describing the interaction of the accelerator and propensity, with lags of consumption and investment expenditures behind the income or changes of income which induce those expenditures. He uses that mechanism primarily to explain the cumulative upward or downward movements of income and production, but not necessarily the turning points.

According to Mr. Hicks, cycles, like verbs, can be classified according to whether they have strong or weak endings. A cycle is said to have a strong ending when it runs into what Hicks calls the production ceiling. This ceiling corresponds to Harrod's natural rate of growth. It is not to be regarded as a stationary upper limit of production but a moving upper limit of the growth of production at or near full employment that the economy can sustain for technological reasons such as limitation of resources. If the course of output determined by the model involving interaction of accelerator and propensity to consume (plus some autonomous investment) leads to a level and a rate of growth of production that cannot be achieved because of the limitation imposed by the ceiling, there will, according to Hicks, necessarily be a downturn. As indicated below, Hicks errs in stating that his model will necessarily indicate a downturn under these circumstances. Whether or not output will turn down after encountering the ceiling depends, as Harrod indicated in his 1939 article, on whether the warranted rate of growth is greater or less than the natural rate of growth. For certain values of accelerator and propensity to consume, however, the natural rate of growth at the ceiling may not be sufficient to induce enough investment expenditure to keep output at the ceiling and, therefore, the encounter with the ceiling will in such cases lead to a downturn. A cycle is said to have a weak ending when the values of the accelerator and propensity to consume are such that output reaches a peak and starts

[12] *Op. cit.*, footnote 10, p. 30.

declining before it hits the production ceiling. That is, in a weak cycle the interaction of accelerator and propensity is such as to generate cyclical movement.

The course of a cycle as described by Hicks is as follows, starting from the beginning of recovery. Once started, recovery is continued and possibly accelerated by the interaction of accelerator and propensity, up to the upper turning point. The downturn at the upper turning point is brought about in the case of a strong cycle by an encounter with the ceiling, in the case of a weak cycle by the interaction of accelerator and propensity. The downswing is governed largely by the fact that the propensity to consume is less than unity, and disinvestment is taking place, so that each period's output and income is lower than the preceding period's until the lower turning point is reached. That lower turning point is determined by the level of autonomous expenditure and by the termination of the incentive to disinvest as capital is, through disinvestment, reduced into the desired relationship to output.

If there were no autonomous expenditure, the values of propensity and maximum possible rate of disinvestment might be such that disinvestment could never catch up with declining output, and there would be no lower turning point. Hicks, however, assumes that autonomous expenditure is greater than the rate at which disinvestment can take place so that a floor is reached at which because of the decline of income, savings are reduced to a level at which they can be matched by the excess of autonomous expenditure over the rate of disinvestment. Eventually, through disinvestment, and possibly through increase of autonomous expenditure, capital will be reduced into the desired relationship to this lower floor of income, and disinvestment will be terminated. The lower turning point will actually be a turning point because, the disinvestment being terminated, investment will rise from a level of autonomous investment minus disinvestment toward the level of autonomous investment itself. This rise in investment will, through the propensity lead to a rise in income, and the rise in income through the accelerator to a rise in induced investment, so that the upward movement is then in full swing to be continued until either the ceiling is encountered or the interaction of accelerator and propensity leads to a downturn.

The cycle has so far been described completely in real terms. The growth of output, and the rates of saving and investment are all expressed as real rather than monetary quantities, as are the functional relations of the accelerator and the propensity to consume. Mr. Hicks does indicate that combined with this real cycle there can also be a monetary cycle which may intensify the fluctuations and change some of their characteristics, such as timing. The monetary cycle ac-

cording to Mr. Hicks essentially depends on a lag of the rate of interest behind its equilibrium value. The rate of interest may so behave over time as to change the values of the accelerator and propensity to consume and so to intensify the strength of the cumulative movements and possibly to add sharpness to the turning points. Thus, if during the upward course of the cycle the rate of interest is below its equilibrium value, even more consumption and investment will be induced than if the rate of interest were immediately adjusted upward. The delay in adjusting the rate of interest would make accelerator and propensity and autonomous investment larger. If, at the upper turning point, the rate of interest should suddenly be raised, it would presumably discourage investment and consumption expenditure and strengthen the forces making for a downturn, and so on through the cycle. Mr. Hicks is clearly less interested in the monetary factors than in the real factors as generators of the cycle. The real factors appear to be fundamental and the monetary factors accidental.

Mr. Hicks' presentation demonstrates the presence of cyclical fluctuations in business cycle theories themselves. In the 'twenties and 'thirties a business cycle theory generally embodied two parts—one was a theory of cumulative movement, explaining the upswing and downswing, the other was a theory of the turning points. This structure of business cycle theories is clearly illustrated by Haberler's *Prosperity and Depression*, 1937 ed., where Chapter 9 is titled "The Process of Expansion and Contraction," and Chapter 10, "The Turning Points." The work of Tinbergen, Frisch, Samuelson and Metzler was concerned to show the possibility of "weak" or "endogenous" turning points, that a single set of relationships expressed in a linear model could explain not only the turning points but also the upswings and downswings. Now Hicks and Goodwin[13] offer non-linear models whose nonlinearity is contained in switches of behavior at or near the turning points, the existence of ceilings and floors. It is a fundamental characteristic of such non-linear models that they can yield a definite amplitude of fluctuation as between ceiling and floor, in contrast to the earlier linear models whose amplitudes depended on the initial departures from equilibrium as well as upon the values of propensity and accelerator.[14]

Since the elements of Mr. Hicks' theory of the cycle were previously well recognized, the principal justification of Mr. Hicks' work was to clarify the relations involved and to show how they can be fit together. This has been done superbly. Furthermore, Mr. Hicks has explored some of the technical characteristics of the mechanism of the inter-

[13] "The Nonlinear Accelerator and the Persistence of Business Cycles," *Econometrica*, Vol. 19, No. 1 (Jan., 1951).

[14] I am grateful to J. J. Polak and Paul A. Samuelson for pointing out this swing of business cycle theories.

action between the accelerator and propensity to consume and presented them with great clarity and ingenuity.

The present discussion considers certain controversial points raised by the general theory of the cycle as presented by Mr. Hicks. These can be considered under the following three headings—*The Cumulative Movement:* Does the interaction of induced investment and disinvestment with the propensity to consume furnish the major explanation of cumulative movements of production? *The Downturn:* Is the downturn to be explained principally either by the encounter with the production ceiling or by the interaction of the accelerator and propensity subject to lag? *The Upturn:* Is the upturn to be explained principally by the slackening or termination of induced disinvestment?

The Cumulative Movement

Some doubt has been cast on the advisability of relying on the accelerator as a major element in the explanation of cyclical behavior. These doubts are based either on objections to the rigidity of the relationship implied or on evidence that factors other than the change in output are the principal determinants of the level of investment. The concern on the first score is groundless. If the accelerator does not hold in so rigid a form as is usually implied in discussions of the cycle but if it does hold with variations, it can serve as the basis for a theory of the cycle of the sort presented by Mr. Hicks. As long as, in general, increasing production induces investment expenditure, cumulative movements can be generated provided also there is another relationship between the level of income and the level of expenditure such as is expressed in the propensity to consume. Furthermore, if some large part of investment should be proportional to the level of income rather than to the change of income, the theory of the cycle is not thereby vitiated. A cumulative movement can be generated so long as some component of expenditure is positively related to the level of income and another component to changes in that level, even though the coefficients expressing these relationships may be variable. Whether the cumulative movement typically proceeds at an increasing or declining rate depends on the timing as well as on the magnitudes of the coefficients involved.

A more serious criticism of the accelerator is that it is not the most important factor governing changes in the level of investment. On this the evidence is far from clear. Tinbergen[15] explored the relationship between investment on the one hand and changes of output and levels of profits on the other in several industries and national economies. He concluded that there was a rather poor relationship between investment

[15] "Statistical Evidence on the Acceleration Principle," *Economica*, N.S., Vol. V (1938).

and changes in output in the industries and economies he studied, with the exception of railroads. He felt that the relationship between profits and investment seemed to be a much closer one. On the other hand Taitel[16] found only a very weak relationship between profitability and rates of investment in the industries he studied and suspected that it was the behavior of output rather than the level of profits that could best explain rates of investment. Roos[17] found that he could obtain a satisfactory prediction of investment for the economy as a whole on the basis primarily of both the level of profits and the ratio of output to capacity. He observed that the latter relationship appeared to be linear up to about 85 per cent of capacity at which point "producers are generally short of equipment and literally pour out new orders for equipment."

Tinbergen[18] in constructing his own economic model assumed that profits depend to a great extent on the rate of change of income. Taitel[19] found that while in years of intermediate recovery almost 50 per cent of the increase in national income produced by the corporate sector in the United States went to the increase in corporate profits, only a negligible (or negative) proportion of the change of national income produced by corporations in peak recovery years went to a change in profits. If, then, profits do in a large measure depend upon the level of output and changes therein, it does not matter much for the theory of the cycle under consideration whether investment is induced directly through the conventional acceleration principle, relating investment to changes in output, or through the level of profits which in turn depends upon the level of output or changes in that level.

It is hard to see how it can be denied that an increasing level of national income stimulates investment expenditure. It is, of course, possible that the mechanism leading to the stimulation of investment by the change in the level of national income involves elements not usually associated with the accelerator, narrowly defined. Thus, increasing levels of expenditure may lead to price rises, which if wages lag, may make investment more attractive. It is a valid criticism of Hicks' presentation that he has disregarded many of the problems of price or credit behavior which complicate business cycle theory. That criticism is not fundamental, however, unless the price and credit behavior would operate to suspend the dependence of expenditure partly

[16] Temporary National Economic Committee, Monograph No. 12, *Profits, Productive Activities and New Investment* (Washington, D.C., 1941).

[17] "The Demand for Investment Goods," *Am. Econ. Rev., Papers and Proceedings*, Vol. XXXVIII, No. 2 (May, 1948).

[18] *Op. cit.*, footnote 7, *supra*.

[19] *Op. cit.*, p. 34.

on the level and partly on the growth of income. If that fundamental dependence, which we may call the broad concept of accelerator and propensity, holds, it does not matter very much whether it holds directly as the accelerator and propensity are usually defined, or indirectly via profits, price, and credit movements.

Though Mr. Hicks' cyclical model can be defended against the charge of excessive rigidity by admission of the possibility of flexible accelerator and propensity operating both directly and indirectly, Mr. Hicks' discussion of his model may not be so easily defended. Issues are raised at several points that would disappear if the broad concepts of accelerator and propensity were substituted for the narrow rigid relationships. Thus, Mr. Hicks is concerned that his model shows a slower downswing than upswing, in contradiction to general observation.[20] The slower downswing, under the strict operation of the Hicks model, is based primarily on the fact that disinvestment cannot proceed so rapidly on the downswing as can investment on the upswing. But if the relationships of accelerator and propensity are presumed to hold only in a general way, it is quite conceivable that the upswing may be slower than the downswing without recourse to the monetary factors Hicks introduces to meet this emergency.

An artificial example may demonstrate this point. Suppose that the lag of consumption behind income is very short, so that when considering annual income the multiplier may be assumed to operate within the period. Suppose that for any rate of growth of income of 10 per cent or more there is induced investment of about 10 per cent of the national income, and that savings minus autonomous investment are always about 20 per cent of the excess of national income over a level X at which savings minus autonomous investment are zero. Then the final period of the upswing might be characterized by a rate of growth of income of about 10 per cent per year, at a level of income about 2X, with induced investment balancing saving minus autonomous investment at about .2X each. The downswing would involve a precipitous fall of the national income to X even if there is no disinvestment possible, a 50 per cent decline within a single year. This crude example suffices to show that, once the broad concepts of accelerator and propensity are substituted for the narrow ones, the time shape of the cycle is much more flexible than Hicks indicates.

Hicks' presentation of the theory of the cycle must strike many readers as being oversimplified and highly special. Many more factors must enter than have been taken into account. By broadening the concept of accelerator, propensity and autonomous investment, this re-

[20] P. 116.

proach can be met; and the theory of the cumulative movement made much more general. In its more general form it may be stated as follows. Production of any period depends directly on the expenditures made in that period. These expenditures may be divided into three classes: those dependent on current or previous levels of income, those dependent on current or previous changes in the levels of income, and those that are autonomous. Under these circumstances, certain cumulative movements of income can take place. Whether these movements will continue in one direction or tend to be reversed as they work themselves out depends on the magnitudes of the relationships involved and their timing. This general statement is broad enough to cover almost all theories of the upswing and downswing of the business cycle. The various theories differ only in the mechanisms by which they relate the movements of expenditure to the movements of income. Certainly the propensity to consume, and investment induced by the change in the level of income either directly or through profits, and investment depending on the level of income, all must have a prominent place among the factors linking changes in expenditure to changes in income. It must however be recognized that these factors need not be quantitatively constant within a cycle, nor need they operate in quite the same way in different cycles.

The broadening of the concepts of accelerator and propensity does introduce the possibility of many variants of business cycle theory not considered by Mr. Hicks. Thus, some investment not at all the sort usually regarded as subject to the accelerator, may still be income-induced. For example, deepening of capital such as is involved in adopting more complicated machinery is the sort of investment usually regarded as autonomous rather than as subject to the accelerator or propensity. But if there is hesitation in making such investment in the depressed phase of a business cycle, and readiness in the prosperous phase, such investment may be considered as income-induced and so should be included in the broad concept of the propensity. For example, growth of population may proceed at a steady rate and so lead to a steady increase of the need for housing. House construction activity, however, may be induced at a rapid rate in prosperous years and at a low rate in depressed years. It is argued below that the difference between such income-induced expenditures, which may be called timing-induced autonomous expenditures, and the other types of induced expenditures may be of great importance in the theory of the upper turning point.

We may henceforth use the terms accelerator and propensity in their broader sense. The propensity, now to be considered the propensity to spend, is the coefficient of level-induced expenditures, that is, the

measure of those expenditures induced by a given level of income. The accelerator is the coefficient of change-induced expenditures, the measure of those expenditures induced by a given change in the level of income. Autonomous expenditure is expenditure both for investment and consumption which does not depend on either the level or the change of income. An elegant study of the precise manner of operation of the accelerator and propensity when these are considered variable is a task beyond the powers of even advanced mathematics, but the non-mathematical economist is fortunate in that the relationships involved can be understood and manipulated in terms familiar to most economists.

At any stage of the cycle, the subsequent course of income and production depends on whether the expenditure currently being induced plus that autonomously appearing is greater than the value of current or recent production. This determination can be expressed in terms reminiscent of Keynes' *Treatise on Money*, that if investment exceeds savings, income will expand, and vice versa. That is, total expenditure equals consumption plus investment, income equals consumption plus savings, so that investment minus savings equals expenditure minus income. Consequently an excess of investment over savings implies an excess of expenditure over income.

In order to make sense of these terms, the timing of expenditures relative to the income or changes of income that induced them must be considered. If lags are very short relative to the time period considered, analysis of the type used in Harrod's 1939 essay will indicate the nature of the movement concerned. Thus suppose the accelerator to be, on an annual basis about 2, and level-induced plus autonomous expenditure to be about 95 per cent of total income. Then a rate of growth of 2½ per cent per year will account for change-induced expenditure via the accelerator of 5 per cent of income per year so that total expenditure will be 100 per cent of income and the rate of growth can be continued. As Harrod pointed out, if the rate of growth should be larger, say 5 per cent, aggregate expenditure would tend to exceed income, and an accelerated upward movement could be expected.

If now we introduce lags, it is essentially the same, in analyzing an upswing, as reducing the values of accelerator and propensity. Thus suppose that each year's expenditure is determined as before, the accelerator being 2, and induced plus autonomous expenditure being 95 per cent of income, but depending on the previous year's income instead of on the current year's. Then an initial rate of growth of 2½ per cent a year would not maintain itself as it did in the previous example. The reason is that this accelerator and this propensity, in applying to last year's income and rate of growth of 2½ per cent will

just lead to expenditure *equal* to last year's income, but not to expenditure *greater* than last year's income. Under these assumptions an initial increase of 2½ per cent would be followed by a zero change in expenditure, which would in turn be followed by a 5 per cent decline. If last year's rate of growth were 5 per cent, however, that rate would be continued because the change-induced expenditure ($2 \times 5\% = 10\%$ of last year's income) plus the level-induced plus autonomous expenditure of 95 per cent of last year's income yields an expenditure this year of 105 per cent of last year's income, just sufficient to maintain the 5 per cent rate of increase of expenditure and hence of income.

If, however, expenditure should be lagged three years, no initial rate of increase of income could be maintained with the coefficients assumed.[21] Under such circumstances the cumulative growth of income would soon taper off into a decline and there would be a weak cycle. The existence of the weak cycle thus depends upon the presence of lags, which implies that on the upswing current expenditure induced by the lower incomes of previous periods is not sufficient to maintain the previous rate of increase of income. Of course, the weaker the accelerator and the smaller the propensity, the shorter the lag that will suffice to convert a situation of steady growth into one of cyclical fluctuation

A general theory of the business cycle can thus be expressed as the manner in which the expenditure of any period depends on the income and changes of income of that and the preceding periods as well as on autonomous expenditure. For any specification of the nature and timing of that dependence and of the autonomous expenditure, a particular path of expenditure will be traced out. Up to now it has been assumed that expenditure sets the level of real income. A further amendment of the general theory can be introduced by allowing for a price as well as a real income change in response to a change of expenditure. The above generalization of Mr. Hicks' model leaves room for almost all theories of the business cycle previously advanced. Economic phenomena are varied and complex, so any comprehensive theory of the business cycle that can apply closely to reality must be very complicated, but almost all the complications that any theorist would care to consider can be incorporated in this generalized model.

The Downturn

From the preceding discussion it may be concluded that a downturn can be brought about by: (1) A decline in autonomous expenditure. (2) The interaction of accelerator and propensity—a weak cycle. (3)

[21] See my article, *Quarterly Journal of Economics*, Vol. LXIII, No. 2 (May, 1949), for a discussion of the conditions in which steady growth is possible in such a model.

A change in the coefficients. (4) A limitation on the rate of growth of income.

A downturn of income starts simply when expenditure turns downward. This may occur for a variety of reasons. Autonomous expenditure, since it is autonomous, may turn down and so initiate a cumulative downward movement. Mr. Hicks assumes autonomous investment to proceed smoothly and therefore his readers may miss the important point that fluctuations of autonomous expenditure may possibly either reverse or accelerate a cumulative movement that is under way. Mr. Hicks lays great stress on the importance for cycle theory of the concept of steadily growing autonomous investment, an importance which this reviewer questions on two grounds. Its inclusion does not modify the general theory except by an additive component, that of super-multiplied autonomous investment. Secondly, the fact that the timing of otherwise autonomous investment depends on the phase of the cycle is very important for cyclical theory, since it, essentially, leads to a change of the coefficients. This factor may be lost from sight if it is assumed that autonomous expenditure grows steadily. There is no objection to the assumption that there is a steady trend of autonomous expenditure about which actual autonomous expenditure fluctuates, either independently or with induced timing.

The weak cycle, dependent on lags and low values of accelerator and propensity, seems to afford an explanation of the downturn applicable to several turning points in the past. In particular the downturns of 1949, 1937, 1926 and 1923 were quite possibly of this sort. In these downturns inventories seem to have played a major rôle.

It is quite possible that a weak cycle ends because the accelerator and propensity, previously large enough to have accounted for steady upward movement of an explosive sort, change values so as to lead to a downturn. Mr. Harrod, in *The Trade Cycle,* laid great stress on this sort of development. The existence of timing-induced autonomous investment introduces a possibility of a reduction of the propensity after high levels of income have been attained, thus leading to the sort of downturn characteristic of a weak cycle. Such a development has long been recognized in business cycle theory as the satiability of investment needs. In the upswing of the cycle accumulated autonomous investment needs begin to be met and in full prosperity such investment may constitute a large part of total investment. But timing-induced autonomous investment, by its very nature, does not proportionally respond to increases of income and so, beyond the levels of income at which no significant additional autonomous investment is timing-induced, the growth of income may not induce sufficient investment to support the rate of growth. Then at the downturn, not only the

change-induced investment, but much of the timing-induced autonomous investment may dry up and so intensify the downswing. If the upswing lasts a long time, there may be a slackening of timing-induced autonomous investment well before the downturn, thus speeding the downturn. On the other hand, the timing-induced investment may, like the rest of autonomous investment, continue after the downturn and so help limit the downswing, as in an inventory recession that does not develop into a depression.

Similarly, if the accelerator, narrowly defined, leads during the upswing to more investment than is required for the expansion that is taking place, the basis is laid for a subsequent reduction of the accelerator since later expansion of output can then utilize the extra capacity acquired in the early recovery. Similar considerations apply to inventories, especially since the latter may be built up on the basis of speculative anticipations. Factors such as these may lead to a downturn before encounter with the ceiling.

Hicks seems to lay principal stress on the encounter with a production ceiling as the explanation of the end of the boom. Actual experience in wartime with the level of production meeting the limitation of productive capacity suggests that the situation at the peak of most business cycles is considerably different.[22] It may be true that there is an upper limit on investment imposed, not so much by productive capacity as by the habits of businessmen and possibly by short-term bottlenecks. That is, toward the peak of a cycle higher rates of increase of income may no longer induce correspondingly higher levels of investment. Something very much like a ceiling may exist as a result of a reduction of the value of the accelerator associated with entrepreneurial behavior at higher levels of prosperity, even though the economy may still be physically capable of expanding at a more rapid rate.

Not only does it appear doubtful that upswings have in the past been reversed by encounter with the ceiling, but, contrary to Mr. Hicks' argument,[23] a downturn does not necessarily follow an encounter with the ceiling. A simple artificial example may serve to establish this point. Suppose that the propensity to spend is .95 lagged one year and the accelerator on an annual basis is 2.1 so that each year's income is given by the expression

$$Y_t = .95\ Y_{t-1} + 2.1\ (Y_{t-1} - Y_{t-2}).$$

Suppose further that the ceiling rate of growth is 6 per cent. If the ceiling is encountered when the rate of growth of income immediately

[22] J. S. Deusenberry, "Hicks on the Trade Cycle," *Quart. Jour Econ.*, Vol. LXIV, No. 3 (Aug., 1950), also questions whether many cycles, in fact, collapsed because they reached the limit of production.

[23] P. 100.

before the encounter is much larger; say 15 per cent, the equation above would yield an expenditure 22 per cent above that of the previous year. This could call forth an increase of production only of 6 per cent, the remainder of the increase of expenditure presumably going into higher prices. The next year's expenditure can be ascertained from the formula[24] to be about 7 per cent greater than the expenditure of the preceding year which will again bring out an increase of about 6 per cent in physical output, the remainder of the expenditure going into higher prices. From that time forth this pattern will be repeated each year, a 7 per cent increase in expenditure calling forth an increase of 6 per cent in production, the ceiling level of increase. The particular example given above has in Mr. Harrod's terminology two warranted rates of growth, one of 5 per cent a year and one of 100 per cent a year. If the ceiling rate of growth is between these two warranted rates, the ceiling rate of growth can continue.

If we may assume that the lag of consumption behind income is negligible, and that saving minus autonomous investment runs at a very small proportion of the national income, then a rather modest ceiling rate of growth would be sufficient to perpetuate itself. Thus, if level-induced expenditure plus autonomous expenditure should come to about 98 per cent of current income, and if the accelerator should be of the magnitude of 1 or more on an annual basis, then a ceiling rate of growth of 2 per cent would be sufficient to permit maintenance of the ceiling rate of growth.

The Upturn

There seems to be no serious competitor of the termination of disinvestment and the presence of autonomous expenditure for explaining an upturn. Certainly one of the most important factors generating an upturn is the termination of disinvestment in inventories. This can be expected to lead to a higher level of income at which disinvestment in capital goods is reduced, and eventually some net investment induced, and then the accelerator can really come into play so as to help generate a cumulative upward movement.

The existence of minor cycles, in which net investment remains well above zero must depend either on a very high level of autonomous investment relative to induced investment, or a low sensitivity of part of induced investment to moderate changes in the level of income, or both. Thus the typical inventory recession can remain merely an inventory recession only if non-inventory investment is fairly well maintained throughout. Otherwise it would develop into a great depression.

[24] Assuming the income appropriate for inclusion in the formula is real rather than money income.

One of the major uncertainties that characterizes any downturn, when viewed contemporaneously, is whether it will cumulate or be reversed. That question depends only in part on fundamental conditions such as the strength of autonomous investment, but also in part on a circular relationship of investment to the level of output. For if fixed capital investment is maintained, it will be justified by the recovery after the inventory cycle is past; if it is abandoned, that abandonment will be justified by the great depression which will develop. The uncertainty at the downturn is thus inherent in the circular self-justification of aggregate investment.

It is possible that the insensitivity of certain types of expenditure to the cyclical movements of income that, because of that insensitivity, turn out to be minor cycles could be explained by lags. If there were a very long lag of investment or consumption expenditures behind the income and income changes that induce the expenditures, much of the expenditure in the downswing of a minor cycle would be induced by the levels and growth of income from the periods before the downturn. It seems more realistic to assume a variable propensity and accelerator, rather than so long a lag. Some downturns may not discourage consumption and long-term investment and others may. Some room must be left in business cycle theory for the human factor, especially for expectations. The extreme mildness of the recession of 1949 can be explained by the strength of autonomous investment, the weakness of induced disinvestment except in inventories, and the complete suspension of the propensity in that personal consumption expenditure rose in the face of declining disposable income. The Hicksian analysis can fit such a development only if applied in a manner far more flexible than is implied by Mr. Hicks' presentation.

The Monetary Cycle

The monetary factor most stressed by Mr. Hicks is the interest rate. As a result Hicks goes against the popular opinion that the interest rate can do little toward stabilizing the cycle, and concludes that an interest rate policy can in principle act as an efficient stabilizer.[25] He admits "that it can only claim to stabilize the economy on (or in the neighbourhood of) the equilibrium line";[26] He fails to point out that the equilibrium line, which is "super-multiplied" autonomous investment, a moving Keynesian equilibrium, may fall far below full employment. Mr. Hicks admits that a low rate of interest can not greatly stimulate investment in a depression. Use of a high rate of interest to cut down the level of investment at an income which is

[25] P. 164.
[26] P. 165.

less-than-full-employment income but above the Hicksian-defined equilibrium is highly questionable.

Instead of resuscitating the interest rate as an anti-cyclical factor in the conventional way, Mr. Hicks' theory seems to indicate, at certain points, a contrary policy. Thus, if in fact the limitation on steady growth at the ceiling is the inadequacy of change-induced investment, and if in fact a lower rate of interest would induce more investment, a low rather than a high rate of interest would be desirable at the ceiling. If the low rate of interest does not induce sufficient additional investment, additional autonomous expenditure would seem to be required, such as might be achieved by governmental expenditure or governmental stimulation of private expenditure.

Conclusions

Mr. Hicks furnishes a most useful skeleton outline of the business cycle. But it is too rigid a skeleton, flexibility must be introduced and the relationships broadened and generalized. Once the concepts of accelerator and propensity are broadened to cover in a flexible manner all change-induced and level-induced expenditures as well as timing-induced autonomous expenditures, there is room for a great deal more flesh on the skeleton than Mr. Hicks has put on it. With that additional flesh, however, this theory of the cycle presents a number of features that may be recognized in other, older, business cycle theories. Mr. Hicks' cycle looks different from other theories of the cycle because only the bare bones show. Those who object that Mr. Hicks' presentation is oversimplified and too monistic and rigid will find that the qualifications and multiplicities they wish to introduce can easily be fitted on the framework he provides.

A Note on the Definition of Equilibrium

Unfortunately, Mr. Hicks uses the term equilibrium in a confusing manner. There is one concept of equilibrium usually used by Hicks which makes good sense from the mathematical formulation of his theory. The behavior of income over time can, in a linear model such as is used by Mr. Hicks, be expressed as a sum of a number of components. All but one of these depend on the initial levels of income which set the process off; the one component which is independent of these initial conditions is "super-multiplied" autonomous expenditure. That component may advantageously be regarded as the equilibrium value of income. If the levels of income which initiate the sequence should be exactly equal to that component, all other components are then given zero weights, and income will trace out its equilibrium path. Needless to say, an equilibrium so conceived is not in any sense normative; it has nothing to do with full employment,

or where income should be. It is merely a convenient conceptual basis from which cyclical fluctuations or nonautonomous growth can be measured.

There is another concept, first developed by Mr. Harrod, of the warranted rate of growth, which depends on propensity and accelerator but not on autonomous expenditure. Sometimes Mr. Hicks considers such a warranted rate of growth, which he calls the regularly progressive economy, as an equilibrium path. Mr. Hicks, in Chapter V, considers the conditions under which the two components, the warranted rate and the super-multiplied autonomous expenditure, will have the same rate of growth. The sum of two components each growing at a steady percentage rate can itself grow at a steady percentage rate only if the rates of growth of the two components are equal. It seems to this reviewer that no particular interest attaches to this situation, which should be regarded as highly coincidental, so that the propositions of Chapter V concern a highly special concept of equilibrium and steady growth. Such statements as "Autonomous investment itself will have to increase at a constant rate of growth if equilibrium is to be maintained," "Provided the rate of growth is properly chosen, the regularly progressive economy can remain in equilibrium without fluctuation," "If the rate of growth of output is given, autonomous investment must have the same rate of growth," and "Autonomous investment must expand uniformly if the economy is to remain in progressive equilibrium," are either untrue or true only when a very limited meaning is given to equilibrium or steadily progressive equilibrium. Thus, from the point of view of Chapter V, if income as governed by the Hicksian model should be composed of one component steadily growing at 2 per cent a year and a supermultiplied autonomous expenditure steadily growing at 3 per cent a year there is no steadily progressive equilibrium, while if the two components both grow at 3 per cent a year there would be a steadily progressive equilibrium. The unwary reader might erroneously infer that the movement not in equilibrium was necessarily less smooth, or in some way less desirable, than the movement in equilibrium. It would seem advantageous to reserve the concept of the equilibrium path to the super-multiplied autonomous expenditure. Steady growth of income need not be called the equilibrium rate unless it happens to be at the rate of growth of autonomous investment. Autonomous investment should certainly not be assumed to grow steadily. The sum of components each growing at a different steady rate need not be intrinsically less interesting than the sum of components each growing at the same steady rate. In fact, much of Chapter V seems, to this reviewer, inappropriate or misleading, in contrast to the clear and helpful presentation of most of the rest of the book.

GOLD IN SOVIET ECONOMIC THEORY AND POLICIES

By ALFRED ZAUBERMAN*

A year has passed since the Council of Soviet Ministers put the rouble on a "gold basis" corresponding to its gold content. The present article discusses this Soviet move against the background of Soviet theoretical thought on gold in the last three decades.

I

There has been and still is little quarrel among Soviet economists on gold in the context of the capitalist society. The *point-de-depart* is the well-known Marxist proposition that gold being a product of labour is equivalent to any goods of equal labour content,[1] while paper money is equivalent to the quantity of gold which it represents "symbolically."

How far is Marx's teaching on money applicable to an economy at the stage of the dictatorship of the proletariat? On this point the contending schools parted way very early, at the time of the Soviet community's childhood.

The Preobrashenskij School's answer was that this teaching had general validity but it did not prejudge *per se* the issue of preserving money in the post-revolutionary community.[2] Money in fact would be doomed to die away in such a society, though the process would depend *on the type* of society passing through its proletarian revolution; it might be a prolonged one since the self-depreciating money would become a useful tool of Marxist "primary accumulation," at the expense of the disintegrating small-capitalist class. This clearly absolved the school from speculating on the rôle of gold in the post-revolutionary epoch's economic system.

Events outpaced Preobrashenski's vision and while depreciation and virtual repudiation of money forced the system into the straitjacket of a primitive barter economy, theoretically minded economists were constructing models based on a money-free calculus.[3]

* The author is Doctor of Laws in economics.

[1] Karl Marx, *Capital,* Vol. 1 (English translation, London, 1938), p. 105.

[2] E. Preobrashenskij, *Bumashniye Dienghi v Epokhu Proletarskoj Diktatury* (Moscow, 1920) and *Finansy v Epokhu Diktatury Proletariata* (Moscow, 1921), pp. 71 *et passim.*

[3] The most outstanding for its elaborateness and intellectual finish was Professor S. G. Strumilin's conception, *Probliemy Trudovogo Uchota* (Moscow, 1920). He tried to reconcile labour value calculus with a marginalist approach.

It is hardly necessary, I believe, to retell here the well-known dramatic *volte-face* at the very moment when the anti-money tendencies seemed at last to be victorious. On both the theoretical and practical planes it is legitimate to connect this victorious counter-current mainly with the names of L. N. Jurowskij and G. Ya. Sokolnikov.

According to Jurowskij, there was actually little choice for the reformers but to follow a spontaneous push of the forces of the economy which by 1922 restored gold to wide circulation in the country.[4]

This, of course, gives only one aspect of the reality; when a return to the mixed NEP model was decided upon—the need for media to stabilise prices and open up the economy for foreign trade strongly recommended a gold-backed currency.

Sokolnikov seems to have had a wider perspective of theoretical horizons. The problem to him—unlike Jurowskij—was not only one of expediency; his was the classicist idea of the rôle of gold and his choice was only limited to its traditionalist and more economical modernised gold-exchange-standard version. He came out for the latter.[5]

Practical policies followed the victory of the Jurowskij-Sokolnikov school, clearly endorsed by Lenin himself.[6]

By the end of 1922 the Reform was well on its way. The Bank's reserves were swelling. In 1923 it was strong enough to carry out the "currency intervention" (perhaps this *was* the point at which saturation of internal circulation with gold was considered).

Despite its victory the Sokolnikov-Jurowskij school still had a hard struggle to wage.

A series of Strumilin's articles in *Ekonmicheskaya Zhisn* branded the reform as anti-Marxist. Sokolnikov's riposte is worthy of restatement since we will hear its echo a quarter of a century hence.

> . . . The most remarkable thing is that Comrade Strumilin *slips down into nominalism* (italics supplied) and against all the consistent Marxist theory denies the inter-connection of gold and paper money. . . . Strumilin's theory of money would have ground had we a fully socialist com-

[4] L. N. Jurowskij, *Na Putiakh k Dienieshnoj Rieformie* (Moscow, 1924), pp. 68-69.

[5] G. Ya. Sokolnikov, *Gosudarstviennyj Kapitalizm i Novaya Finansovaya Politika* (Moscow, 1922), p. 10 and *Probliemy Finansovogo Stroitielstva* (Moscow, 1923), p. 17.

[6] In his earliest writings Lenin seems to have given little or no thought to the institutional problems of money and gold. There is some evidence that later on, in fact as late as 1921, he was leaning towards Preobrashenskiy's doctrine. That year he seems to have changed his mind on the subject, since it was he who prepared a resolution voted in due course by the 9th All Russian Congress of Soviets approving the restoration of "rational money circulation on the basis of a gold currency—with utmost effort and urgency." There is some evidence to believe that about 1922 he toyed with the idea of introducing gold into the internal circulation. Soviet writers would of course not admit to Lenin's vacillations.

munity and not an economy of the predominantly small commodity producer and were we not dependent on the external markets still under the sway of capitalism. . . .[7]

II

When the mixed system of the NEP was coming to its close its money concept was of necessity becoming obsolete. The team of the Planning Commission which led the work of reshaping the economic model firmly believed that the end of the money-price and wage mechanism was at last in sight;[8] but once again such ideas were found to be premature and were abandoned. Another reform, that of the early 30's, brought the Soviet money mechanism into line with the working principles of an almost fully collectivised and fully planned system. Within the sphere of production the rouble ceased to serve as a vehicle for the transfer of purchasing power and became an index-unit for efficiency control. In the realm of consumption the rouble now had to serve as a sort of a generalised "ration-card" in a classless society living almost entirely on wage-type incomes.[9]

It would seem that in this money system there could hardly be any scope for a gold "basis," whatever this vague term, so much in vogue in present-day Russian literature and practice, connotes.

All the settlements with the outside world and all the financing of foreign trade are made in foreign currency (or gold shipments). True, a basic—a French franc and since 1937 a dollar—"parity" for the rouble was quoted. But since the economy has gradually assumed the pattern of a closed one (in the sense that links between the Soviet and external price levels have been severed and that the price-cost imputation of imported goods has become a purely conventional accountancy device),[10] parity has become almost void of any economic meaning.

However, even though the new money system is supposed to have reached its final shape—there is still a noticeable under-the-surface simmering of the old dispute.

One of the main inheritors of the non-money philosophy, Professor Notkin, stresses in postwar literature the primacy of physical terms calculus and argues that the "commodity money form"—apart from cost accounting—is merely convenient as a material stimulus supple-

[7] G. Ya. Sokolnikov, *Finansovaya Nauka* (Moscow, 1930), pp. 101-2.

[8] L. M. Gatovkij, "O. Prirodie Mienovykh Sviaziej na Novom Etapie" in the *Na Novom Etapie Sotsialisticheskogo Stroitielstva,* edit., G. M. Krshyshanovskij.

[9] *Cf.* the present writer's "Economic Thought in the Soviet Union" in the *Review of Economic Studies* (1949-50), pp. 107 *seq.*

[10] Z. Atlas and N. Grodko, "Mieshdunarodnyje Raschoty i Krieditovanije Vnieshniej Torgovli SSSR" in the *Dienieshnoje Obrashtchenije i Kriedit SSSR* (Moscow, 1947), pp. 402 *seq.*

menting the main purely social stimuli and direct "forms of control." Such a proposition would imply that, already in the socialist stage on the path towards communism there is no logical necessity for money and that it could be dispensed with provided an equipollent mechanism of stimuli were put into operation.[11]

In fact, there seems to be strong evidence to support the contention that the basic allocation of resources is performed in the U.S.S.R. in the physical term plan.[12]

Those who subscribe to the ruling school, however, maintain that quite apart from the problem of incentives socialist society has no alternative to money calculus either in measuring results of work or in distribution. Suppose a product proves *ex-post* to be in deficit. "Applying labour time calculus," says Professor Atlas in a recent work "assumes that changes in quantity of products do not influence their labour valuation. A rigid labour valuation at a given level of labour productivity would imply an impossibility of reducing demand . . . by economic measures. To change labour valuation of a given commodity by adjusting it to the demand-supply position would mean discarding the basic principle of the labour-time calculus, *i.e.* discarding the very principle of the socially necessary labour which has actually been spent on it."[13] *(Would not this statement mean that money calculus has to be accepted—if not for other reasons—at least to protect the labour theory of value from exposing its inadequacies in operation?)*

Anyway, experiments of the last twenty years have apparently convinced Soviet rulers that no system of economic controls or checks so far conceived is purposeful enough to replace that of the money costs-price calculus, at least in the scale of the whole economy or of whole industries and their groups. This seems to be the root reason of the officially blessed efforts to inspire in both the sphere of production and consumption a conviction of the "reality" of Soviet money, whatever the meaning of this loose term. Though financing individual State enterprises with grants from the general budget is in no way incompatible with a rigorous rule of maximising their accountancy profit, there is a growing tendency to discard the grant-system with the obvious view of strengthening the "money morale" of the management. Similar

[11] Z. Notkin, *Otcherki Tieorii Sotsialistitcheskogo Vosproizvodstva* (Moscow, 1948), p. 49 *seq.* On the theoretical plane there is also involved the problem of law of value in the socialist community. At a special meeting of the Institute of Economics, Professor Petrov ably expressed the official criticism's view when he said: "With Notkin the Law of Value is like God with the deists. He exists but he does not act." *Cf.* a report in the *Voprosy Ekonomiki,* N. 4/1948, pp. 82 *seq.*

[12] E. Lokshin, Planirovanije Matierialno-Tekhnitcheskogo Snabzhenija Narodnogo Khoziajstva" in *Planovoie Khoziajstvo,* N. 2/1950.

[13] Z. Atlas. Dienieshnoje Obrashtchenije v Sovietskoj "Sistiemie Kheziaistva" in the "Dienieshnoje. . . ." (ut supra), p. 15.

considerations have certainly been influencing the government with respect to the wage-retail-price mechanism. Since the abolition of allowances in kind and derationing, cash earnings have been strengthened in their rôle of the main labour incentive and here again an appeal to the worker's imagination of the "real money" argument has acquired particular importance. Reference to the money's "gold basis" (again—whatever this loose expression may mean) has apparently commanded itself as a psychologically useful expedient.

In economic writing a vigorous resumption of the anti-nominalist crusade is a significant corollary to the trend of practical policies.

One is almost tempted to venture the paradox that during the last twenty years the Soviet money doctrine has completed a full circle; that in fact the hands of the clock were put back even beyond the original Jurowskij-Sokolnikov position (the latter questioned his opponents' "nominalist" approach only in the historical context of the mixed and semi-open economy of the time). Of course this statement carries the risk of superficiality. The Jurowskij-Sokolnikov school stood for a money-commodity equilibrium looked after by a gold-exchange-standard; translated into the problematics of the early 30's this meant brakes being put on industrialisation and retarding the setting-up of the state-socialist economy. Since, however, the latter model has now become firmly established, the basic Jurowskij-Sokolnikov approach is certainly anachronistic to-day. But the more striking are the analogies of *looking to gold* in the quest for a firm standard of money in so diametrically different economic settings.

The "pro-gold" tendencies have revealed themselves significantly in an important book on the rôle of gold in the two world wars by an eminent Soviet expert, Professor Mikhalevskij;[14] the main impact of his criticism was directed against the "Hitlerite theory of demonetization of gold" with its roots in Germany's plans to obviate international trade by eventual division of the world into a few autarchic areas; and primarily in her lack of gold resources—the fable of the sour grapes (clearly the fable yields its moral *à rebours* as applied to the Soviet Union, considering her potential capacity in gold mining).

The doctrine has recently been presented more eruditely and against wider horizons of economic history and thought, by Dr. Eidelnant.[15] At the dawn of the capitalist era—his argument runs—the nominalistic tendencies sprang from a sound and progressive demand for expanding the framework of the monetary system, in step with economic growth. Since the beginning of the twentieth century (Eidelnant elaborates Mikhaleveskij's contention), nominalism has

[14] F. Mikhalevskij, *Zoloto v Pieriod Mirovykh Vojn* (Moscow, 1947).

[15] A. B. Eidelnant, *Noviejshij Nominalizm i Jego Priedshiestvienniki* (Moscow, 1948).

developed in Germany its distinctly anti-English brand caused by her relative weakness in the world gold production and markets—till it became in the 'thirties a doctrine of German economic aggression; in its turn, an English version of nominalism has gradually developed as a theoretical basis for the defence against the "dollar—dictatorship" (the author is happy of course to have here his occasional dig at the Marshall plan); Keynes comes up for the usual criticism, as a protagonist of the school which "tried to prove that by means of money freed from . . . 'harmful' (the author's quotation marks are eloquent) requirements of the gold standard one can allegedly control . . . the capitalist trade cycle, secure boundless growth and do away with unemployment." Eidelnant's attempt at a general diagnosis of the *"nominalistic complex"* would show as its common symptoms: (a) "a negation of the use-value of money"; (b) "an identification of metallic and paper money"; (c) "a reversal of classical teaching on the nature of relationship between the value of precious metals and money and, consequently, of the classical teaching on monetization."

Thus Dr. Eidelnant is proud to redeem for the socialist world the firm ground of Marx's original doctrine, which seemed to be lost in the process of the construction of socialism (K. Marx, *Critique of Political Economy,* p. 142).

One may feel warranted in assuming that it was not for the intellectual satisfaction of asserting the catholicity of Marx's doctrine of gold that anti-nominalist tendencies have recently received a remarkable spur and encourgement in the Soviet Union. After all, it is not so long ago that no less an authority than the Director of the Institute of Economics of the Academy himself made a frank statement that Marx's vision of the distributive mechanism in a *socialist* community proved to be utterly wrong.[16] Perhaps even today Marx's anti-nominalist vindication is by implication non-Marxian since it claims universal validity for his theorems outside their historical framework.

As we have tried to show, there seems to be a strong interconnection between the trends in literature and the requirements of practical economic policies for the restoration of the belief in the *"reality"* of money.

Meanwhile new elements in the sphere of international economic relations have appeared which have reinforced the "real" money tendency. The present gold "content" of the rouble is as meaningless as was its previous gold parity; it is especially irrelevant as an expression of either relative purchasing power or—on Marxian grounds—of gold production cost. The new formula, however, is more compatible with Russia's assumed rôle of hegemon of a great economic

[16] K. Ostrovitianov, in the *Voprosy Ekonomiki,* N. 1/1948.

area. With the growing measure of integration and socio-economic structural assimilation of this area, the main centrally made economic decisions, and consequently the inter-State movements of resources, have grown by now independent of relative money price-and-cost considerations; precisely as are analogous decisions on the allocation of resources in the U.S.S.R. (*ut supra*). This does not preclude, however, that for inter-State economic relations of the area some more or less conventional rouble-price accountancy will be found appropriate; the recent translation into the rouble of the published data on these States' trade and financial relations with U.S.S.R. seems to show this. "The Soviet rouble becomes an instrument of a planned development of the economic relationship between the Soviet economy and the economies of popular democracies," Professor Koslov recently wrote.[17]

For a somewhat distant future a gradual introduction of the rouble into the internal circulation of individal countries of the Soviet sphere of influence may be a plausible contingency. The Polish November reform which put the zloty on a rouble "gold" parity is clearly a step in this direction (the more so as the old zloty conversion rate seems to have been chosen with the view of unifying the existing *money*-wage systems and thus preparing for the final phase: that of unifying *real*-wage systems after internal prices have been adjusted.) True, from the angle of this gradual process of integrating wage-price structures on the rouble basis the gold "content" is irrelevant as well; anyway, to state that a socialist trading area would fare best with gold as the basis of its own economic relationship is a rather far cry even from the concepts of the Jurowskij-Sokolnikov school. But there again linking the individual currencies at par with the gold-based "strongest world currency" suggests itself as a psychologically useful expedient.[18] Thus the requirements of Russia's new status in the world have not only strengthened the *"real"* money ideas which have taken root in internal economics but have called on the theorist to expound the idea of the real *world* currency, a task fulfilled at this juncture by the economic literature under Professor Mikhalevskij's leadership, which duly points out the gold rouble's natural predestination for this rôle, as contrasted with Western currencies "void of intrinsic value."[19]

III

Our historic account, if correct, would suggest that the newly accepted dogma of metallic basis and content of the rouble is some-

[17] G. Koslov, in *Voprosy Ekonomiki,* No. 3/1950, p. 30.

[18] *Cf.* Z. Atlas in *Gospodarka Planowa,* N. 7/1950 and Janusz Malicki, *op. cit.,* N. 11/1950.

[19] F. Mikhalevskij, "Zołoto kak Mirovyje Dienghi i Valiutnyj Diktat," in *Voprosy Ekonomiki,* No. 1/1950.

thing to be interpreted in terms of domestic economic policy as well as in relation to the international position of the Soviet Union.

Most recent developments seem to confirm the contention of the growing emphasis on the "reality" of money in internal economic calculus. During 1949 the Soviet government definitely did away with the system of grants to cover deficits in heavy industries and, on the quiet, raised the latter's release prices; the mark seems to have been overshot and the following year (1950) witnessed sharp cuts in iron, steel, cement, heavy chemicals and machinery prices ranging between one and two-fifths. The trial-and-error readjustment process has been used to impress on industrial management the importance of a strict money economy regime, though it has been frankly admitted in literature that the problem has not yet been satisfactorily solved;[20] one is allowed only to guess how far this is due to the intrinsic difficulty of making "real" money make-believe profits a stimulus, especially in conditions of conventional rigid supply and release prices for plants on different levels of technico-economic efficiency.

As to the international aspect, the shift of the centre of gravity in Soviet trade away from the world outside her politico-economic Orbit should certainly be borne in mind. Although the foreign trade turnover of the U.S.S.R. is reported to have doubled during the last decade, the increase is said to have been entirely due to the growth of her intra-Orbit exchanges, which has come to account for two-thirds of the Soviet total; in real terms the volume of trade with the rest of the world has very probably shrunk by half in that period,[21] and the deadlock in the West-East economic relations discourages expectations of a reversal of this trend in a foreseeable future. It would hardly be wise strategy on Russia's part to force the rouble on her Western trade partners at this unfavourable juncture. Forecasts of such a course have been belied by the facts—so far.

Now it is, I believe, a debatable point whether and how far the Soviet Union would have to readjust the officially proclaimed rouble parities were she to choose to internationalize her currency. Even more questionable seems to me the widely held view that this would involve radical changes in her pricing principles, or at least reshaping her actual price structure.[22] Her method of price imputation of foreign-trade-goods in the domestic cost-accountancy; her fully monopolistic state trading system coupled with a strict policy of a near-balance in her receipts and payments in current account, might secure to the

[20] *L. Maizenberg*, "Sistiema Optovykh Tsien i Ukrieplienie Khozraschiota" in *Voprosy Ekonomiki*, No. 2/1951, p. 59 *seq.*

[21] United Nations, *World Economic Report, 1949-50*, preliminary edition, p. 160, *seq.*

[22] *Cf., int. al.*, M. R. Wyczalkowski, *Staff Papers, International Monetary Fund*, Vol. 1, No. 2.

present parity, much as it is over-valued in the light of any purchasing power computations, an appearance of a true equilibrium rate; at least these appearances could be kept up by a small sacrifice. Yet the U.S.S.R. has apparently not found it advisable, or worth while, to submit her currency to the test.

It *is* a somewhat curious phenomenon to watch with what obstinacy it is repeatedly asserted that

> USA tries to impose on the whole world the paper dollar as the foundation of international settlements, as an international currency. But it is well known that it is gold only which can fulfill the role of international money. . . .[23] and

> Placing the rouble on the gold basis means that the rouble is the only currency in the world with a hard, gold content . . .[23]

—as against policies actually pursued. I am afraid delving further into this baffling dichotomy of the spheres of word and deed would lead to the study of semantics or the psychology of the Soviet Union's over-all strategy in world relations. The fact is that since the gold-rouble proclamation no marked changes have been noticed in the technique of her payments outside her own Orbit; no inhibitions are shown in carrying on her trade as before in dollars, sterling and other foreign currencies generally acceptable to her partners; and while the obvious aim is to equalise the current bilateral, largely barter, accounts, deficits oscillating around a mere 50 million dollars a year are apparently being settled with gold shipments and/or most probably with currencies earned by countries of her Orbit who accumulate a surplus with the rest of the world. Many a symptom points to the economic resources of the Soviet Orbit being pooled in this field in the same way as they are in others. It is, however, with respect to the Orbit that the problem of internationalising the rouble seems to have acquired some relevance, provided specific meaning is attached to the concept.

Many Marxists believed that geopolitical changes brought about by World War II had at last challenged them with the urgent and exciting task of drawing up a set of principles and a blueprint of a mechanism to operate in economic relations between highly collectivised States. The question at issue seemed to them to be, not only how to secure an optimum division of labour of a Socialist family of nations, but also the additional one arising out of discrepancies in this family members' economic development, as expressed in their different labour intensity and productivity;[24] *i.e.*, in the question—what should

[23] Professor Koslov, *op. cit.*, pp. 27, 28 and 30.

[24] K. Marx, *op. cit.*, p. 572.

be the rules of the game to temper the iniquities of one nation getting more work for less work. The Soviet Union's determined policy of a speedy integration of the Orbit has mercifully relieved the eager minds from the formidable task, at least in our day.[25]

The suggestion has been widely made that the knitting together of an area of free multilateral transfers was Russia's aim in calling to life the Council for Mutual Economic Assistance. Yet the multilaterality of trade exchanges and transfers within the Orbit appears to differ only in degree, not in essence from that which exists between different provinces of the same area, or—in a vertical plane—between different "combinates" subject to the same centre of decision. What is, in accepted parlance, confusingly referred to as trade agreement between the Soviet Union and a country of her Orbit has been ably and frankly described[26] as least by one author East of the Elbe as being "nothing else but a Plan and bearing all the characteristics required by the notion of Socialist planning." The point is that far from being a kind of a friendly oligopoly, the Soviet-Socialist Orbit is an area of centralized planning with very limited reference to national boundaries.[27] Consequently, the problem whether and what sort of money should exist in the inter-member relationship, a unit of account or a means of payments, is being gradually solved on the same principles as it has been internally. I ventured to submit earlier in this article that outside the sphere of consumers' earnings and spendings the rouble in the Soviet Union is merely an accountancy unit. This becomes true, at a pace accelerated since 1948, in the Soviet-Socialist *inter*-State model. Nevertheless, many a reason for cultivating the

[25] For a voice of frustration, *cf.* Milentije Popovic, *On Economic Relations Among Socialist States* (London, 1950). Before the last war, when the problem had a purely academic interest, attempts to formulate the rule of the game were made only in Western writings, *cf. int. al.* G. D. H. Cole, *Studies in World Economics* (London, 1934), *passim*, particularly pp. 178 *seq.* on "constructive bargains."

[26] Adam Mazurek, *Wykonywanie Planow w Polskim Handlu Zagranicznym* (Warsaw, 1950), p. 35.

[27] Professor Viner anticipated essentially the point at issue as early as 1944, though his approach referred to a socialist community of nations as visualised by Marxians, not to one of the pattern shaped by the Soviet Union in the years to come—this *Review*, Vol. XXXIV, No. 1, Pt. 2, Suppl. (Mar., 1944), p. 328. I regret having become acquainted with Mr. Michael L. Hoffman's illuminating paper on the problems of trade between planned economies and with the ensuing discussion (*cf. American Economic Review*, May, 1951), only after the final draft of this article was completed.

I have found myself in agreement with Mr. Hoffman's contention that none of the things particularly emphasized by pre-war socialist literature characterizes the economic relations at present prevailing among the States of Eastern Europe; in fact I am disinclined to accept the term "trade" with reference to these relations. On the other hand I join Mr. Suranyi-Unger in his view on the existence of a consistent over-all plan governing the inter-State flow of goods and services in the Soviet Orbit; but again I definitely subscribe to Mr. Hoffman's opinion that this flow is completely dominated by Russia and her politico-economic *raison d'etat*.

doctrine of "real" money militates in the latter model *a fortiori;* in so far as members of the Orbit build up account-rouble holdings, it is convenient to have proclaimed as a point of orthodoxy the dogma of the rouble being "real" money vested with all its classical functions (that of a means of payment and of a store of value included) by virtue of its metallic basis and contents, however shrouded in mysticism these may appear to a theoretical analyst. The essential fact is that such holdings in the hands of any member-state of the Orbit do not give much stronger claims on goods, gold included, than those in the hands of a manager of an industrial plant; they are not a source of liquidity, hence there is no need within the Orbit of a medium of international settlement agreed upon and commanding general acceptance.[28] In the circumstances, I submit, there is no necessity to readjust the arbitrary parities within the Orbit as a pre-condition of internationalising it in the Orbit. True, I mentioned the tendency of putting members' currencies on the rouble parity; apart from its political significance it seems to be primarily a measure of technical expediency at this stage, and an indication of the possible eventual introduction of the rouble into their internal circulations; this would contribute to streamlining the over-all planning and thus to the economic homogeneity of the Orbit; it has been suggested in this article that one could discern a tendency to level out, step by step, the average real cost of labour as a condition of such a process. Incidentally, this might be shown to be in keeping with Marx's teaching

[28] Ragnar Nurkse, *Conditions of International Monetary Equilibrium* (Princeton, 1945), p. 29.

An important paper by I. Zlobin, "Sovietskij Rubl' Samaja Protchnaja Valiuta v Mirie" in *Voprosy Ekonomiki* (No. 7/1951, pp. 89 *seq.*) which appeared after this article was set in print made several admissions, at least three of which seem to be of particular relevance for our subject. *Firstly,* the socialist countries' camp, we are being told, "tends towards its own price-basis and its own money-scale of settlements in conformity with its social structure" and has discarded world prices in its members' relations. Note that while the claim of faithfulness to the world price system has been dropped at last, no light has been shed on what was the bearing of the common collectivist socio-economic structure on the intra-Orbit pricing. *Secondly,* the rouble, we are being told, has displaced the USA dollar "as a clearing accountancy unit" and has become "the main and leading accountancy and settlement currency of the entire camp." Note the studied vagueness of the statement with regard to the technique and nature of settlements. And, *finally,* there is at least one indication of the pooling of outsiders' currency by way of some multilateral arrangements with extra-Orbit countries.

The freshness of M. Zlobin's approach lies also in his frank emphasis on Soviet Russia's position as a "major gold producer" as well as in his uninhibited admission of Russia's inability to "disinterest herself either from the problem of gold or from gold resources." There is incidentally an attempt to explain away the Soviet Union's gold sales as a result of non-convertibility of most capitalist countries' currencies rather than of an overall adverse balance of payments. While this version sounds plausible enough, one may be permitted to presume that it applies to only a part of recent Soviet operations in world gold markets.

THE NATURE AND SIGNIFICANCE OF PRICE LEADERSHIP

By Jesse W. Markham*

That the Supreme Court's decision in the *Tobacco* Case[1] of 1946 attaches a new significance to price leadership in oligopolistic markets seems beyond reasonable doubt. The *Tobacco* decision constitutes a reversal of the stand taken by the Court in the *U. S. Steel* and *International Harvester* cases, where the Court ruled that the acceptance of a price leader by the rest of the industry did not constitute a violation of the Sherman Act by the price leader.[2] If we accept the full meaning of what the court has really said, that parallel pricing, whether implemented by an agreement or not, is now illegal, pricing policies prevailing in markets where sellers are few will henceforth be subjected to a much closer examination than they have been in the past.

Accomplished students of the monopoly problem, anticipating what such oligiopolistic market studies might be expected to reveal, have predicted the possibility of some sweeping changes in the conduct of American business enterprise. Professor Rostow, for example, sees in the *Aluminum* and *Tobacco* decisions, when viewed collectively, the possible foundations for a new Sherman Act "which promises drastically to shorten and simplify antitrust trials" since they represent a triumph of the economic over the more cumbersome legal approach to the antitrust problem.[3] Professor Rostow points out specifically that such tacit parallelism, as evidenced by the practice of following a price leader, now lies within the scope of the antitrust laws.[4] Professor Nicholls cautiously points out that the assumptions which he made in his recent appraisal of the *Tobacco* decision,[5] namely, (1) that the

* The author is assistant professor of economics at Vanderbilt University. He expresses indebtedness to Professors George W. Stocking and George J. Stigler for their critical appraisal of this essay and for their many helpful suggestions.

[1] *American Tobacco Co., et al.,* v. *United States,* 148 F. 2d 416 (1944); 328 U. S. 781 (1946).

[2] *United States* v. *United States Steel Corporation,* 251 U. S. 417 (1920); and *United States* v. *International Harvester Company,* 274 U. S. 693 (1927).

[3] Eugene V. Rostow, "The New Sherman Act," *University of Chicago Law Review* (June, 1947) pp. 567-600. For a warier appraisal of the *Aluminum* and *Tobacco* decisions, see Edward H. Levi, "The Antitrust Laws and Monopoly," *ibid.,* pp. 172 ff.

[4] Rostow, *ibid.,* p. 577.

[5] William H. Nicholls, "The Tobacco Case of 1946," *Am. Econ. Rev.,* Vol. XXXIX, No. 3 (May, 1949), pp. 284-96.

Courts really said what he believed them to have said and (2) that they will carry to their logical conclusion the legal implications of that decision, may rest upon dubious grounds. Nevertheless, he concedes the possibility that such *modi operandi* as price leadership, the presence of which was perhaps the most important piece of incriminating evidence in the *Tobacco* case, are now illegal.

If the legal implications of the *Tobacco* decision as interpreted by Professors Rostow, Nicholls and others be accepted, the economic consequences of price leadership and the specific conditions likely to render it an effective weapon against price competition in oligopolistic markets need to be re-examined. Because the Court has not yet faced up to the problem of providing appropriate remedies, the question of wherein lies the most fruitful remedial action should at least be raised. It is primarily to this task that this article is addressed. Since, however, there is always the danger of assigning unwarranted homogeneity to such an economic phenomenon, its significance will be appraised on the basis of (1) the particular types of price leadership which prevail in industrial markets and (2) the extent to which each type might conceivably circumvent forces of competition.

Professor Stigler has distinguished between two kinds of price leadership: (1) that associated with a dominant firm and (2) that of the barometric type.[6] Since, however, one of the market conditions that the barometric firm's price is supposed to reflect is both secret and open price-cutting,[7] it is not always possible to determine whether the barometric firm should be viewed as the "price leader" or as one of the first "price followers." Hence, for purposes of this discussion, the above otherwise satisfactory dichotomy will be augmented by a third type of price leadership which may be viewed either as an extreme form of the barometric type or simply as price leadership in lieu of overt collusion.

"Models" of Price Leadership

Although most of the vast volume of economic literature on price practices and policies conveys the impression that price leadership is a logical and effective means for eliminating price competition among rival sellers, theoretical treatment of the topic has been cast in rather simple static terms and limited to three special cases.[8]

[6] George J. Stigler, "The Kinky Oligopoly Demand Curve and Rigid Prices," *Jour. Pol. Econ.*, Vol. LV, No. 5 (Oct., 1947) pp. 444-45.

[7] See Professor Stigler's illustrative case, *ibid.*, p. 445.

[8] The number of institutional and other conditions under which the prices set by one firm in an industry might be used by all others is probably very large, but only three sets of conditions seem to make price leadership of some sort inevitable and at the same time identify the price leader.

Perhaps the most familiar theoretical model of price leadership is centered upon the dominant firm or partial monopolist. Starting from the assumption that an industry comprises one large producer and a number of smaller ones, no one of which produces a high enough percentage of total output to influence the price, it logically follows that the rôle of price-making falls to the dominant firm. This is true because each small firm regards its own demand schedule as perfectly elastic at the price set by the dominant firm and thus behaves as though it operates under conditions of perfect competition. The dominant firm might set any price it chooses, but presumably would set one which maximizes its profits by equating its own marginal cost with its marginal revenue as derived from the market demand schedule and the summation of the individual marginal cost curves of the independent small producers.

Professor Boulding[9] has presented two other theoretical models of price leadership. One relates to an industry comprising one low-cost high-capacity firm and one or more high-cost low-capacity firms, the other to an industry comprising at least two firms having identical cost curves but different shares in the market. In the former case, because no price can equate marginal cost with marginal revenue for both (or all) firms, a conflict in price policy inevitably arises. However, since the price preferred by the low-cost high-capacity firm is lower than the price preferred by the high-cost low-capacity firm (or firms), the low-cost firm can impose its price policy on the industry. In the other case, under assumptions described by Professor Boulding as "rather peculiar," that marginal cost curves for all firms are identical and that each firm's relative share in the market is different from that of all other firms and remains unchanged over the entire range of possible prices, marginal cost and marginal revenue are equated at a lower price for the firm having the smallest share in the market than for any other firm. Hence, the firm having the smallest share in the market at all possible prices can impose the price most acceptable to it on the rest of the industry. Professor Boulding makes no claim that the latter model is built upon sufficiently realistic assumptions to throw much light upon price policies generally but suggests that it might explain price behavior in the retail gasoline industry.

It is worthwhile to point out that in none of the above three models is price leadership a result of collusion; in fact, in each of the models price leadership is an inevitable consequence of a particular cost or demand phenomenon which precludes price collusion among sellers as a possible solution. Moreover, in none of the three models is the absence of competition attributable to the presence of a price leader. In

[9] Kenneth E. Boulding, *Economic Analysis*, rev. ed. (New York, 1948). For a diagrammatical presentation of the two models, see pp. 582, 586.

each of the three cases, conditions in either the factor or product market are already assumed to be inconsistent with the assumptions associated with highly competitive industries. Since the empirical evidence presented in a later section also suggests that effective price leadership, for the most part, is a result of monopoly rather than a cause of it, it is important that these two observations be borne in mind when it comes to prescribing appropriate remedies for industries having price leaders.

Dominant Firm Price Leadership

Contrary to the general belief that price leadership, because it eliminates the kink in the oligopoly demand curve, makes for a higher degree of price flexibility, Professor Stigler has presented evidence to show that "Except for the number of price changes of two-firm industries . . . , the prices of industries with price leaders are less flexible than those of industries without price leaders . . . ."[10] Significant though this discovery may be as evidence of the nonexistence of kinked oligopoly demand curves, it should be pointed out that the basic conclusion reached by Professor Stigler applies to a particular type of oligopolistic market and, hence, is not conclusive evidence that price leadership, regardless of type, leads to less flexible prices. For example, Professor Stigler limits the industries characterized by price leadership to those in which a dominant firm (one that produces a minimum of 40 per cent of the total output of an industry and more if the second largest firm is large) is present. Hence, industries characterized by other types of price leadership were included among those having no price leader. Moreover, the average number of firms in industries classified as having a price leader was slightly less than one-half of the average number of firms in industries not so classified. It is not surprising, therefore, that the former group shows a higher degree of price inflexibility than the latter for two reasons.

First, the rationale of price-making by the dominant firm or partial monopolist differs but little from that employed by the pure monopolist. They both, presumably, have complete control over prices, but the partial monopolist, unlike the pure monopolist, must take account of the quantity that the competitive sector of the industry will offer at any price he may set. However inadequate classical theory might be in explaining the rigidity of monopoly prices, given the empirical evidence that monopoly prices are relatively inflexible, it probably follows that prices controlled by partial monopolists assume similar ridigities.

Secondly, the greatest number of firms in any industry classified

[10] Stigler, *op. cit.*, p. 446.

among those having a price leader was four; the average number of firms in such industries was three. On the other hand, one industry not classified among those having a price leader contained as many as twelve firms and another contained eleven; the average number of firms in industries classified as having no price leader was over six. However, since many of the excluded industries such as the rayon, newsprint, copper, gasoline, plate glass, window glass and plow industries possess barometric price leaders and a larger number of firms than those having a partial monopolist, Professor Stigler's findings could also be interpreted as evidence that (1) prices are more flexible under barometric than dominant firm price leadership and (2) price flexibility increases as the number of firms is increased. Professor Stigler isolated and very adequately treated the latter relationship himself;[11] the former will be discussed more fully below.

In the light of the formal theoretical construction employed to explain the rationale of dominant firm price leadership, a fairly strong argument can be made against even including markets where prices are set by a dominant firm among those containing a "price leader." Formal solutions which yield an equilibrium price in such markets preclude all possibilities of the failure of small firms to follow the dominant firms' price change, and, hence, from the viewpoint of the dominant firm, increase the probability of their following to absolute certainty. That is to say, whether the dominant firm attempts to maximize profits in the short-run by equating its own marginal cost and derived marginal revenue schedules or pursues some other price policy, so long as it produces at a rate of output which clears the market at its own price, the remaining firms in the industry have no choice but to equate their marginal costs with the price it sets. Essentially, therefore, the pure dominant firm market presents a problem of monopoly price control rather than one of price leadership.

For purposes of public policy, to draw such a distinction between monopoly pricing and price leadership involves more than a mere question of definition. Price "leadership" in a dominant firm market is not simply a *modus operandi* designed to circumvent price competition among rival sellers but is instead an inevitable consequence of the industry's structure. Hence, the only obviously effective remedy for such monopoly pricing is to destroy the monopoly power from which it springs, *i.e.*, dissolve, if economically and politically feasible, the dominant firm. Public policy should hardly be directed toward this end, however, before the foundations of the dominant firm's existence have been thoroughly examined. Nearly every major industry in the American economy has, in its initial stages of development, been dominated

[11] *Ibid.*, p. 444.

by a single firm—the Slater Mill in cotton textiles, the Firestone Company in rubber tires, Birdseye in frozen foods, the American Viscose Corporation in rayon yarn, etc., to mention only a few. The monopoly power of the initial dominant firm in most industries, however, was gradually reduced by industrial growth and the entrance of new firms. It is not at all certain that public policy measures could have either hastened or improved upon the process. Where forces of competition do not eliminate such power, however, (Professor Stigler has suggested the aluminum and scotch tape industries to me as possible examples), it is highly improbable that a mere declaration of the illegality of price leadership by the courts offers itself as a sufficient or even a possible remedial measure. The dominant firm would simply be confronted with the dilemma of (1) changing prices frequently and reminding the public with each price change that it sets the price for the industry or (2) simply varying its output and risk the attendant onus of price fixing. Hence, should all dominant firms accept the implications of the recent *Tobacco* decision at their face value, there would be no reason to conclude *a priori* whether prices in markets dominated by a particular firm would henceforth be more or less flexible, or would more closely approximate prices which one would expect under more competitive conditions.

Barometric Firm Price Leadership

Unlike price leadership of the dominant firm type, there is no explanatory hypothesis which identifies the barometric price leader. In contrast to the dominant firm, the barometric firm "commands adherence of rivals to his price only because, and to the extent that, his price reflects market conditions with tolerable promptness."[12] Hence, the reasons why a particular firm is the barometric firm must be found in the historical background of an industry and the institutional and other features which have shaped its development.

It is worthwhile to note in passing that in a large number of industries which do not contain a partial monopolist, the price leader is frequently but not always the largest firm. In the newsprint industry, for example, International Paper, the largest producer, has led most price changes in markets east of the Rocky Mountains and Crown Zellerbach, the largest western producer, has usually announced new prices on the west coast. The price leadership of International, however, has sometimes been challenged by Great Northern, another large producer. American Viscose, which at one time completely dominated the rayon industry, has continued to be the accepted list-price leader although it had lost its dominant firm position as early as

[12] *Ibid.*, p. 446.

1930. On the other hand, Phelps Dodge, only the third largest producer of copper in 1947, has been quite active in setting copper prices since OPA controls were removed in November, 1946.

Patently, it is not possible in every case to judge when barometric price leadership is monopolistic and when it is competitive in character without making a thorough investigation, but there are certain visible market features associated with competitive price leadership. For example, unless a particular firm has demonstrated unusual adeptness at adjusting prices to market forces, in the absence of conspiracy one would certainly expect occasional changes in the identity of the price leader. Moreover, unless the lines of price communication are extremely efficient, prices are not likely to be uniform among sellers in a specific market area for a short period immediately following the date the price leader announces a new price. A "wait and see" policy on the part of several sellers not only gives rise to occasional price differentials, but also suggests the absence of even tacit collusion. Furthermore, if new prices are communicated among buyers more rapidly than among sellers, there would be frequent changes in the ratios of sales (and, depending upon inventory policies, of production) of particular firms to the total volume of sales (or production) for the industry as a whole. In the rayon and textile industries, where each large fabricator buys yarn and cloth from several sellers simultaneously, this is usually the case. Buyers iron out price differentials among sellers by refusing to buy at old prices if the price leader has announced a price reduction and buy heavily at old prices if the price leader has announced a price increase.

The price histories of copper and rayon yarn illustrate fairly well most of the outward manifestations one would expect of competitive barometric price leadership. Immediately upon the removal of OPA controls Kennecott Copper took the lead in advancing domestic copper prices from the controlled 14.375 cents per pound to the world price of 17.5 cents per pound.[13] All other producers followed. Eight days later, on November 20, 1946, Phelps Dodge advanced its price to 19.5 cents per pound and was followed by the rest of the industry. On January 28, 1947, American Smelting and Refining Company advanced its domestic price to 20.5 cents; however, other producers continued to sell at the old price until Phelps Dodge increased its price to 21.5 cents on March 3. American Smelting and Refining Company matched the new price but Kennecott Copper announced a firm price policy on March 27 and stated that it would continue to make shipments at the old price. Large copper buyers announced three weeks later, however, that in their opinion "Kennecott had 'reluctantly' advanced their prices

[13] Company prices are from various issues of the *New York Times*.

to meet present levels and the present action to fix prices at present levels meant that Kennecott would be unlikely to follow any further upward price revisions from other sources."[14] In the latter part of June the price of copper settled at 21.5 cents after several weeks of varying prices among sellers. Around the end of July, 1948, several smaller companies increased their prices to 23.5 cents; the larger producers did not follow immediately but withdrew all offerings from the market. On August 3 Phelps Dodge and Anaconda jointly raised their prices to 23.5 cents and Kennecott followed on August 11.

Of the five major copper price changes which occurred between November, 1946, and December, 1948, therefore, Phelps Dodge, a medium-sized producer, initiated three. Competitive factors, however, such as the import tariff on sales made in the United States by foreign producers and price movements of scrap, tin, and aluminum, probably exerted much more influence on copper prices during the twenty-six month period than did the arbitrary judgment of the firm initiating the price changes.[15]

Until 1930 American Viscose was the dominant firm in the rayon yarn industry. Since then the company has produced from only 30 per cent to 35 per cent of the total domestic output of rayon yarn but has first announced over 75 per cent of all list-price revisions. The price leader can exercise only negligible control over rayon prices, however, since they are largely determined by the prices of such close substitutes as silk, cotton, wool, nylon, orlon, and vinyon, each of which competes strongly with rayon in a number of market areas. Moreover, small rayon producers do not hesitate to sell at less than their quoted price when inventories commence to accumulate, a practice which has prompted most of the downward revisions announced by American Viscose. On the other hand, rayon list prices are seldom increased unless the industry is operating close to full capacity and inventories are still declining. For list-price movements, however, American Viscose plays the rôle of the barometric firm.

Barometric price leadership which follows the above lines probably does not greatly circumvent the public interest nor is it likely that the *Tobacco* decision has brought this type of price leadership within the reach of the antitrust laws. The barometric firm possesses no power to coerce the rest of the industry into accepting its price and, in most such industries, it simply passes along information to the "Big Three"

[14] *New York Times,* March 29, 1947, p. 23.

[15] Copper producers seem to feel that their prices are largely dependent upon the prices of such competing metals as aluminum and tin. Between March, 1947, and August, 1948, Kennecott publicly denounced further price increases since it believed they would induce fabricators to substitute tin and aluminum for copper. *Cf. New York Times,* May 5, 1948, p. 41, and August 3, 1948, p. 29.

or the "Big Four" on what the rest of the industry is doing in a declining market, and proceeds with initiating price increases in a market revival only so rapidly as supply and demand conditions dictate.

For purposes of prescribing appropriate remedial action it is important also to differentiate between actual collusive price leadership and "apparent" collusive price leadership which stems more from overt selling arrangements than from simply following price changes announced by a rival firm. In the steel, cement, glass container, and fertilizer industries, what has appeared at times to be barometric price leadership was in fact a natural consequence of basing point and zone pricing systems. Under a single basing point system, if recognized and adhered to by all producers, giving the appearance of following a price leader is inevitable since the pricing policies of all sellers are unalterably geared to the base mill. The same is true of a multiple basing point system if all base mills are owned by a single seller. Identical prices among producers in an industry operating under a multiple basing point system where the base mills are owned by different producers is not clearly a necessary consequence of the basing point system but one should, on economic grounds, expect all prices at least to move in the same direction. A decrease in the base price in one area allows all producers abiding by this base price to further invade adjacent areas until mills in adjacent areas meet the price reduction; an increase in the base price in one area increases the demand for the commodity from mills in adjacent areas, thereby encouraging corresponding price increases. Hence, a sufficient explanation for similar price movements among producers abiding by a basing point system is the presence of the basing point system itself. The best evidence that this is so is the undisciplined pricing which occurs when the basing point system temporarily breaks down.[16]

For the most part, therefore, the barometric price leader, as defined by Professor Stigler and as visualized for purposes of this paper, appears to do little more than set prices that would eventually be set by forces of competition. In such industries as the copper and rayon industries, *i.e.*, oligopolies within monopolistically competitive markets, these prices are largely dependent upon the prices of closely competing products. In more clearly delineated oligopolistic industries, particularly where the number of firms is fairly large, price leadership of the barometric type has seldom if ever been a sufficiently strong instrument alone to insure price discipline among rivals. Price leadership in the steel and fertilizer industries has been a subordinate feature of a basing point system. The glass container industry implemented price leadership by inaugurating a zone pricing and market sharing system.

[16] *Cf.* Temporary National Economic Committee, Monograph No. 42, p. 3.

In spite of this, many firms were not faithful price followers.[17] In the tin can industry, where American Can Company has frequently been identified as the price leader, a recent study suggests that American's list price (computed principally from the price of tin plate) has only established the base line of competition for other can producers.[18] Moreover, American Can's influence over the price of tin cans is as much attributable to its quasi-monopsonistic position in the tin plate market as it is to the company's share of the tin can market.

From the standpoint of public policy the real problem in such markets as those discussed above, therefore, centers upon economic forces which support price leadership rather than upon price leadership *per se*. In industries dominated by a strong partial monopolist, parallel pricing among firms stems from the monopoly power possessed by the partial monopolist and not from the tacit adoption of a price leader to circumvent price competition. The competitive sector of the industry often has no choice but to accept the partial monopolist's price. In oligopolies which form segments of larger monopolistically competitive industries, such as those which conform to the pattern of the rayon and copper industries, the barometric firm "leads" price changes only in the limited sense that its price movements are presumed by its rivals to have resulted from a synthesis of all the available market information. Price decreases initiated by firms selling closely competing products and by smaller firms within its own segment of the industry usually prompt downward list-price revisions by the barometric firm. List-price increases occur only after the market forces have been reversed. In most markets of an intermediate character the evidence indicates that price leadership has been decidedly a subordinate feature of a pricing policy built upon the much stronger foundations of trade association activity, zone pricing, basing point agreements, etc.[19]

A comprehensive study embracing the tacit and overt pricing arrangements among sellers in a wide variety of industries more or less oligopolistic in character would undoubtedly point up to more meaningful conclusions than those suggested by the above evidence. Nevertheless, there is some basis for believing that the mere adoption of a price leader is not nearly such an effective means for eliminating price competition among the few as many economists are prone to believe.

[17] *Cf.* Robert L. Bishop, "The Glass Container Industry," in *The Structure of American Industry*, edited by Walter Adams (New York, 1950), pp. 407-8.

[18] Charles H. Hession, *The Tin Can Industry* (privately published), p. 362.

[19] An examination of recent industry studies [including those reproduced in part in *The Structure of American Industry, op. cit.*, and in Walter Adams and Leland E. Traywick, *Readings in Economics* (New York, 1948)] reveals little evidence that price leadership, when not buttressed by stronger means of preserving price discipline, prevented price competition among oligopolists in times of market crisis.

the difficult analytical work required to show the subtle rôle of normative concepts and ethical preconceptions in economic thought is neglected at the expense of listing what economists and historians of economic thought have said about the relation of ethics and economics. This may be less of a disadvantage in the case of those early and recent schools of thought where the connection of ethics and economics is self-evident and, indeed, explicit (*viz.* Plato, Aristotle, early Christianity and medieval economic thought, Physiocrats, Adam Smith, Utopian and Christian socialism, historical school, social protestantism and catholicism). But Flubacher's procedure becomes a definite shortcoming in the treatment of Ricardo, Senior, Cairnes, Menger, Jevons, Pigou, Robbins, Cassel, Davenport, Marx and, indeed, the entire tradition of neo-classical economists with their avowed intention to make economics pure and "positive," *i.e.*, divorced from all normative considerations.

It is true Flubacher seems to suspect ethical predelictions in "many of the leading classical, neo-classical and contemporary British and American economists" and realizes that "hidden biases [may be] lurking beneath the façade of scientific purism." But he does not undertake to analyze these predelictions and biases. As a result he misses the opportunity of showing that the normative character of a system of knowledge may lie precisely in its inadequate comprehensiveness—that is to say, in its dogmatic separation of the economic from the non-economic and in its methodological procedures which induce it to select for special study mostly those aspects of socio-economic reality which lend themselves to treatment and manipulation by quantitative mathematical methods.

As it is, the book may prove useful as a guide to the literature on the subject and as another indication of the persistence of a tradition, from antiquity to contemporary economics, which looks upon all social sciences as inevitably normative-ethical in character and content.

K. William Kapp

Brooklyn College

Cours d'Economie Politique, Volume I. By Jean Marchal. (Paris: Librairie de Medicis. 1950. Pp. 937.)

Those who are familiar with French academic economics will welcome and appreciate Professor Marchal's monumental piece of work. Although not path-breaking, the book is original in its presentation and in the historical perspective that transcends the explanation of the modern economic system.

Volume I is divided into four parts, entitled: Birth and Evolution of the Contemporary Economic System, The Basic Elements of Production, The Price Mechanism, Money and Credit.

The approach is historical and institutional with a "humanistic" flavor. Only the price mechanism and the value of money are treated analytically, the first along well-known partial equilibrium lines, the latter with the help of I. Fisher's and the Cambridge formulas.

The historical perspective of the contemporary system is given in the first three hundred pages. Starting from the Middle Ages, the author gives a very interesting account of the successive stages of economic institutional and doc-

trinal development, up to the twentieth century conscious drive towards a "welfare economy."

The author shows much historical and institutional erudition, especially in the chapters on money and banking, which are excellent except for the last one on the theory of the price-level.

While the historical and institutional chapters may be of great benefit to the Anglo-Saxon student, the theoretical ones, namely those on the price mechanism and the price level, will appear less original and inferior to the best English texts.

The author depicts very interestingly the transformation of atomistic into "group" capitalism, and shows the interest-antagonisms in the latter. Discussing the possible solutions to these antagonisms, he rejects "integral planning" and corporatism, and expresses his preference for a "controlled economy," or "liberal interventionism," or "socialism for free men." Unfortunately, unlike A. P. Lerner and others, Professor Marchal fails to give a precise and well-founded "theory of policy," or criteria of proper policy action. He repeatedly insists on the *human* aims of the economic system. But this evokes nothing more than a vague sentimental ideal, which nobody would quarrel with. The author does not seem to possess a coherent "welfare economics" system. He ignores, *i.a.*, Pareto's and his colleague Allais' contributions in this field. On pages 527, 607 and 613, it is suggested that public utilities fix zero-profit prices, which contradicts the well-accepted marginal cost pricing rule.

As a former student and a teacher at the Paris Faculty of Law, Jean Marchal is to be congratulated for the present work. The weaker and less up-to-date parts of it are the analytical ones. Nevertheless on this score progress is made over Law Faculty predecessors.

In spite of its great merits, mainly as a high-standard basic textbook, Professor Marchal's volume has several weak spots. Aside from minor points, the following may disappoint the critical reader: On pages 226-29, mathematical economics are subject to weak criticism. So is the "marginal utility" theory on pages 709-21. On page 614, one finds the following inaccurate sentence: "Competition is a factor of technical progress and is only that."

Very little mention is made and little understanding shown of the French mathematical school, namely of Walras, Colson, Divisia, Roy and Allais. The gap between the two mutually ignoring and "noncompeting" groups is still very wide. Only a drastic academic reorganization would unleash the French creative spirit in economics, and enable it to continue Cournot's and Walras' scientific tradition on a broad front.

ROGER DEHEM

University of Montreal

Introduction to the Total Theory of Labor: New Positive Foundation of Economics. By ALEXANDER KOKKALIS. (Concord, New Hampshire: Evans Printing Co. 1950. Pp. 232. $4.00.)

The author of this privately printed work pursued his graduate studies in the Germany of the Weimar Republic (he holds an advanced degree from the

University of Tuebingen), then returned to Greece for a period of teaching at Salonika and Athens, and has recently come to the United States, where he has continued his researches and writing with the assistance of certain members of the Greek-American community in New York and New England. He hopes that the present relatively short book may become only the introduction to a definitive three-volume treatise which will set forth his philosophy of economic analysis in full detail; and he makes it clear that he regards his system of thought as being both orginal and significant.

In attempting to give, within the painfully inadequate confines of a short review, some description of the foundation-stones underlying this theoretical structure, it seems both permissible and desirable to fall back upon that easily abused device, a series of quotations. In this instance such a method will make it possible to convey the "flavor" or "climate" of the thinking as well as its content. Fortunately, too, the author has taken special pains to provide a condensed statement of the major components of his own thought.

"We have proven," he says, "that there is but one basic economic means, indeed only one means as such, namely LABOR." . . . "For this reason we give to this study the title: THE TOTAL THEORY OF LABOR."

"If labor is the one and only economic means, it follows that the process of production, more generally, the economic process, is nothing else but the process of labor. Labor springs from the intangible realm within man, crystallizes in the tangible external world, and again returns to the intangible, inner world. Capital is thus the channel through which labor energy passes in order to find its expression in consumers' goods. We are therefore not dealing with a production of a material kind which ends in consumption, but with a SPIRAL-LIKE MOTION OF LABOR ENERGY."

"In order to explain the process of production, the economic process, which as we have said before, is but a process of labor, we must first ascertain the elements of production and value. In this regard, we submit proof that there are, everywhere and at all times, only two elements, two factors of production and of value, namely the DIRECTIVE and the EXECUTORY element."

In employing these two terms, the author seems to envisage a relationship similar to that between mind and matter, though he regards both as being aspects or sub-headings of his all-pervasive labor energy.

"All phenomena which occur in the realm of human activities arise then from these two mentioned factors and find their explanation only by means of our exact establishment of the role and function of these factors."

"For these reasons, we have made an especial effort to ascertain once and for all the inner relationship of the above mentioned elements of production and value and we have succeeded in expressing them in clear mathematical formulae. We have proven that there is a MULTIPLE relationship between them, not an additive one. Our entire theory on value and price is based on this multiple relationship of the two value elements."

"The above mentioned fundamental ideas represent the basic foundations on which the structure of economic science, *i.e.* of the Total Theory of Labor, is erected."

After utilizing about 180 pages in the exposition of these basic concepts, the work concludes with a forty-page discussion of various criticisms and appreciations by other writers. More than half of this final section is devoted to the reprint of a long and sharply controversial open letter, penned by the author in 1946 and addressed to a fellow-economist in Greece.

ELMO P. HOHMAN

Northwestern University

Economic History; National Economies

Brazil: An Expanding Economy. By GEORGE WYTHE with the assistance of ROYCE A. WRIGHT and HAROLD M. MIDKIFF. (New York: Twentieth Century Fund. 1949. Pp. xix, 412. $3.50.)

The Twentieth Century Fund is to be commended for sponsoring several worthwhile and timely studies designed to assist in the development of "a more enlightened American foreign economic policy." In 1947 the Fund published a provocative study on the postwar rôle of the United States in foreign trade and investment.[1] That volume, which emphasizes analysis, interpretation and policy, has been followed by reports on Brazil, Costa Rica and Turkey[2]—countries whose economic, political and social conditions the Fund considers to be of special interest to the United States.

The purpose of the volume under review is to "stimulate the use of American capital and skills in Brazil, not only for the advantage of the United States, but also—and most especially—to increase the standard of living and well-being of the people of Brazil" (p. ix). After two introductory chapters on the economy, geography, government and people of Brazil, successive chapters treat of income and employment, products of the land, problems of food, mining and power, manufacturing industries, transportation and communication, social conditions, public finance, banking and investment, international trade and exchange, and the economic future.

The volume, which is encyclopedic in scope, is primarily factual, descriptive and historical. The senior author has demonstrated his proficiency in this type of writing and the quality of the present volume equals his previous efforts.[3] While much of the basic descriptive materials and factual data may be found elsewhere,[4] there is real merit in having such materials and

[1] Norman S. Buchanan and Frederich A. Lutz, *Rebuilding the World Economy: America's Role in Foreign Trade and Investment* (New York, Twentieth Century Fund, 1947).

[2] Max Thornburgh with Graham Spry, *Turkey: An Economic Appraisal* (New York, Twentieth Century Fund, 1949). Stacy May, Director, with Just Faaland, Albert R. Koch, Howard L. Parsons and Clarence Senior, *Costa Rica: A Study in Economic Development* (New York, Twentieth Century Fund, 1951).

[3] See, for example, George Wythe, *Industry in Latin America*, 2nd ed. (New York, Columbia University Press, 1949).

[4] See, for example, United States Tariff Commission: *Agriculture, Pastoral, and Forest Industries in Brazil* (1946); *Economic Controls and Commercial Policy in Brazil* (1948); and *Mining and Manufacturing Industries in Brazil* (1949).

data summarized and integrated in a balanced volume. The inclusion of a selected bibliography would have been helpful.

In a number of instances the authors draw attention to similarities between Brazil and the United States. Unfortunately, some of these are superficial; furthermore, many real differences are not mentioned or explained. For example, the authors state that the first constitution (adopted in 1891) and form of government of Brazil were inspired by and modeled in many ways after those of the United States (pp. 4 and 33). There is, however, no discussion as to the reasons such institutions in Brazil were overthrown in 1930 and a dictatorship established which remained in power during the succeeding sixteen years. An explanation of the fact that similar institutions maintained their strength in the United States while they were abolished in Brazil would be significant and development programs based on such findings would help in the solution of Brazil's problems. Further, the authors state, "Brazil found inspiration in the United States . . . in establishing its legal system" (p. 4). If this statement is intended to imply that the legal systems of the two countries are alike, it is incorrect except for minor and superficial similarities. The legal system of Brazil is based upon civil law while that of the United States is based primarily upon common law.

Whatever the reasons for the omission of basic analysis and policy formulation (p. x), the value of the volume is lessened thereby—particularly in light of the stated objective. In substantial part this gap has been filled by the study of the Joint Technical Commission.[5] The Commission analyzed the economic, financial and other factors of Brazil which tend to promote or retard economic growth and recommended policies and programs designed to aid in the development of a balanced economy. Careful analysis and understanding recommendations are made with respect to financing economic development programs from domestic and foreign sources and the need for cooperation between private interests and the government.

The two volumes are complementary; together they satisfy the basic needs of the intelligent layman, student and policy maker.

DONALD SHAM

Washington, D.C.

[5] Department of State, *Report of the Joint Brazil-United States Technical Commission* (1949). The Commission was created in 1948 pursuant to the request of Brazil for the assistance of technicians of the United States government to collaborate with the technicians of the Brazilian government.

Statistics and Econometrics

The Role of Measurement in Economics. The Newmarch Lectures at University College, London, 1948-1949. By RICHARD STONE. (Cambridge: The University Press. New York: Cambridge Univ. Press. 1951. Pp. 85. $2.50.)

This volume, small in size but not in scope or interest, offers the economist a look into each of several areas where measurement is indispensable to good economics. These areas range from the axiomatics of utility theory,

through difference equations, social accounting, and the theory and practice of empirical searches for demand curves, to some intelligent remarks on the collection of statistical data and the use of empirical economic knowledge. Thus the book will be able to widen the horizons of nonquantitative theoretical economists and nontheoretical quantitative economists alike. It will also furnish good fodder for the foraging student.

In a short first part (eight pages), Stone quickly introduces economic models, the use of random variables, and the idea of a more or less persistent economic structure that undergoes occasional irregular changes.

The second part discusses what he calls the four types of economic questions that must be answered in obtaining and applying economic knowledge: (1) Questions of fact, including the defining of concepts to be used in empirical work. (2) Questions of the truth or falsity of an hypothesis, which he illustrates by the axiomatic presentation of the theory of consumer choice together with certain logical consequences which if contradicted by reality would disprove the theory. (3) Questions of the estimation of parameters, including an intelligible discussion of economic structural equations—definitional, behavioristic, technological, statutory, and institutional; of the identification problem; and of the advantage of dealing with the more persistent structural equations instead of the less persistent derived or reduced form equations. (4) Questions of prediction, which he discusses in terms of linear second-order difference equations worked out in great detail to show the behavior of simple aggregative systems when left alone or when modified by public policy aimed at a constant national income. One purpose of these simple systems, says Stone, is "to show the logical elements involved in a very simple case; elements which must be supplied by intuition or in some other way if they are not supplied by econometric studies" (p. 35). Chief among these elements are the reactions of the free parts of the economy to possible alternative policy measures.

In the third part, Stone gives two examples of the use of measurement, taken from his own published work: social accounting, and the estimation of linear demand equations for certain commodity groups in the United Kingdom and the United States. For the American data, Stone estimates *several different* plausible demand equations for each commodity group. It is almost necessary to do this, because economic theory alone is not powerful enough to tell just what variables will be the important ones in any particular case, though it can provide a list from which the choice should be made. A caution here: if *enough* equations are estimated from the same set of data, eventually some can be found that fit almost perfectly; but a persisting relation such as we seek is not likely to fit perfectly in any given period, and, accordingly, the almost perfect fit in one period is likely to be very far off in other periods, because it partakes too much of the accidental characteristics of the period it was fitted to. For this reason, an equation that looks good compared with others fitted to the same data must be regarded skeptically until it has been tried with different (usually subsequent) data.

Stone's presentation is usually general in nature, but he brings up some quite technical points. For example, he mentions (pp. 75-76) that Cochrane

and Orcutt[1] found in sampling experiments that Hart and von Neumann's[2] test understates the amount of serial correlation of the random disturbances to an equation. It should be added that this is not due to any error of Hart or von Neumann; it is because their test was designed for *observable* random variables, whereas the true disturbances to an equation can never be observed, but can only be approximately *calculated* on the basis of observed variables and estimated parameters.

In contrast to the technical nature of the previous point, Stone does not even say in this book what estimation method he used (least squares) and why he used it (instead, he refers the reader to other work of his). In view of the current controversy over what estimation method should be used for equations that belong to a system of simultaneous equations, and in view of the fact that he does discuss a technical aspect of the serial correlation test, this seems to be an unwarranted omission.

CARL F. CHRIST

The Johns Hopkins University

[1] "Application of Least Squares Regression to Relationships Containing Autocorrelated Error Terms," *Jour. Am. Statistical Assoc.*, Vol. XLIV, No. 245 (Mar., 1949), p. 45.

[2] "Tabulation of the Probabilities for the Ratio of the Mean Square Successive Difference to the Variance," *Annals of Mathematical Statistics*, Vol. XIII (1942), pp. 207-14.

Economic Systems; Planning and Reform; Cooperation

Capitalism. By DAVID MCCORD WRIGHT. (New York: McGraw-Hill. 1951. Pp. xvii, 246. $3.25.)

One of the dominant myths of the time is that all the ills to which the flesh is heir are uniquely determined by the cultural environment, usually specified as capitalism. From this it follows that some single sweeping change in economic organization will bring peace, prosperity and a race of angels in its train. From Rousseau onwards collectivists of every description have been propagating this idea, and today acceptance of it threatens to become a token of intellectual competence.

One consequence of this dogma involves the comparative appraisal of capitalism and its rivals. Properly so, capitalism is conventionally portrayed with facts—though there is a marked preference for sordid ones—drawn from the actual experience of capitalist societies. All evils, problems and injustices concurrent with the capitalist era are identified with capitalism as a form of economic organization, in a one-to-one correspondence. In contrast, collectivist alternatives have usually been presented as ideal conceptual schemes that combine in utopian fashion a perfect system of abstract justice, complete security for everyone, and an even more rapid advance in total output than capitalism has actually achieved. One has only to read, for example, Engels' *Herr Eugen Dühring's Revolution in Science* and Lenin's *State and Revolution* to grasp this utopian ideology in its fullest expression.

Professor Wright is a foe of this secularized perfectionism. He believes that the choice between capitalism and its rivals—as it is usually presented—is

a dangerously deceptive one because of the delusory utopian character of the collectivist option. Capitalism, he readily admits, does have faults, though some are curable within the system and most of them are not adequately analyzed with existing theory. Also, there *are* alternatives to capitalism, particularly if we desire to go over to a stationary circular-flow system. Accordingly, he attempts in this book to re-examine the major problems attributable to capitalism and to restate the terms of choice between capitalism and its alternatives. In essence he argues: (1) a society free of conflict and some coercion is impossible, whatever the form of its organization; (2) the real choice lies between two clusters of values, incapable of combination in one social system; and (3) capitalism gives rise to peculiar problems of stability, distribution and monopoly, but use of the tools of Marxian or equilibrium theory mainly yields solutions that are inadequate and misleading.

Any social system must provide methods for the selection of rulers, the arbitration of disputes, the enforcement of decisions, the allocation of economic resources and the organization of production. Yet the Marxists, in their ultimate vision, promise a society free of conflict and compulsion. All we need do, runs the argument, is to turn over all power to the planners and abolish private property, and the administration of things will supplant the coercion of men. "Spontaneously and voluntarily from native intelligence and sheer love for humanity everyone will see what ought to be done and do it—or see who the right man is to do the job and let him do it or voluntarily submit to his direction..." (p. 5).

This millennium rests upon two contentions, often uncritically made to depend upon each other: that private property is the root cause of conflict, and that planning will achieve abundance and make conflict unnecessary. In contrast, Wright holds that conflicts mainly derive from the insecurity produced by growth and change, from which emerge pressure groups and resistance to change. Thus people may be egotists about other things than money: a hard-won skill, a particular neighborhood, the authority conferred by a particular job. Economic change disrupts these customary expectations, and can lead to pressures and conflicts, even under planning. If socialism is to favor growth, these conflicts follow. If it is to be stationary, there will still be a struggle for power, for not everyone can be a commissar. And either way, even the most selfless idealists can disagree concerning ways and means. Thus abundance of goods does not mean the end of conflict, or need for arbitration and coercion. But abundance is unlikely anyway, because wants will rise with the standard of life and population may continue to increase.

In the comparison of social systems, we really are faced with a choice between basic sets of values. If we want growth and change, we require a chance for new men to rise on independent terms, free to change existing ways of doing things. Wright believes a decentralized competitive capitalism, fortified by free institutions and reasonably stabilized but not too much, is best calculated to foster the creative individualism essential to spontaneity and growth. This is the surest route to "broad opportunity, rising living standards, tolerance, democracy, independence, change and activity . . ." (p. 223). If instead we prefer complete stability and a serene, contemplative

existence in an orderly and tightly organized society with a fixed standard of living, then "socialism" or some type of centralized planning is the logical alternative. And then most, if not all, the preceding values will have to be sacrificed. But if we want the values fostered by capitalism *and* the perfect security of a routinized economy, we cannot have them both together, for the incentives, ideologies, controls and conditions required for each are mutually exclusive.

Having so cleared the decks, Wright proceeds to an examination of what he considers the problems of capitalism.

The first problem, that of distribution, must start with the recognition that growth is capitalism's peculiar characteristic. Much income now regarded as profit really represents other costs or is the illusory product of inflation. The crucial element in true profit is the marginal net gain that induces the risk-bearing essential for new firms, new methods, new products and expansion of existing production. If there were no growth, little or no profit would remain or be needed. Interest too has its main justification in a dynamic expanding capitalism, as an incentive for needed saving and as a means for rationing command over free resources.

In consequence, Wright rejects the labor theory of value. As a description of price formation it fits the stationary case tolerably well, though I would add that Wicksteed proved it involves an unneeded extra assumption. Even here it fails as a causal explanation, and it is totally misleading for the growth case. And as a critique of distribution, the theory is also unsatisfactory because it fails to recognize the contributions of saving, risk-bearing and entrepreneurship to increased productivity and higher real wages. For a growing capitalism, profit and interest cannot be regarded as surpluses arising from exploitation.

Regarding the business cycle, Wright holds that perfect stability is unattainable in the growing economy, because changes of tastes and of techniques do not smoothly offset each other. "It is *durability* of equipment plus asymmetrical *changeability* of wants plus inevitable frictions plus *consumer sovereignty* which produces the business cycle" (p. 153, Wright's emphasis). "Planning" can only achieve stability either by greatly slowing down or abolishing growth. Thus he rejects what he calls "left-wing cycle theories," those that rest on some form of the underconsumption hypothesis or presume that planlessness, rather than growth itself, is the cause of instability.

Turning to the problem of monopoly, Wright rejects appraisals that stem from the stationary models of pure or perfect competition. They have led welfare economists to concentrate somewhat myopically upon the division of the product rather than its growth. They also lead to overemphasis of market imperfections and to neglect of the constructive rôle of temporary high profits of innovation. Established monopolies and allied cooperative stabilization schemes are bad because they systematically underestimate demand and involve protection of vested interests at the expense of competition and growth. Standards for workable public policy here should consider in a given case how many rivals the alleged monopolist has, whether there is interproduct competition, and how long dominance has existed. Mere size and concentra-

tion are not alone sufficient guides. Most important, we require policies that encourage the emergence and growth of new firms, rather than private or government stabilization schemes, punitive taxation and union restrictions.

Like private business, trade unions are also capable of "tremendous distortion for anti-social purposes" (p. 184) by obstructing innovations, slowdowns and uneconomically high wage costs. All these may increasingly impinge upon marginal profits, innovation and growth. This is the primary issue, not whether unions can raise real wages for their (surviving) members. Of course they can. But at what costs to the economy as a whole?

In Wright's view capitalism can be "stabilized" in the sense of curbing the excesses of deflation and inflation. For the former, we require stimulation of private investment, coupled with temporary deficit spending, incentive taxation and a stable level of money wages. We should avoid restrictive stabilization schemes, soak-the-rich taxation and wage inflation. Anti-inflation policy suffers from the current delusion that inflation is a matter of "high" prices rather than real physical shortages induced by abuse of the power to create money. The basic cure lies in raising the rate of interest and increased taxation of mass income—"Keynesianism in reverse."

In Wright's opinion over-all stabilization of capitalism in a socially acceptable degree is possible without sacrifice of its unique promise for growth and rapidly rising standards of life. However, this cannot mean perfect individual security, and the attempt to pursue such security would be fatal to growth itself. Yet there is a very real danger that people will be led to expect and demand such securiy, particularly under the guidance of collectivist-minded intellectuals whose ruling ideas are drawn from the stationary society envisaged by Veblen and the erroneous doctrines of increasing misery proclaimed by Marx. What is needed is a better understanding of capitalism—its incentives, advantages, and problems—and a recognition that complete security, perfect justice and rapid growth cannot be had together in this life.

This book is a member of McGraw-Hill's Economic Handbook series. It is the product of mature thinking about these issues, and is studded with interesting critical comments. The style is very easy going, and for the most part the argument is well organized. Wright certainly succeeds in revealing the absurdity of the Marxian promises regarding the ultimate form of collectivism, in some respects even improving upon Mosca's classic discussion in *The Ruling Class.* Influenced by Schumpeter's precedent of restating old issues in new and often more informed ways, Wright has again placed the problem of growth in the foreground. The convention of comparing *growing* capitalism and its problems with *stationary* collectivism and practically no problems can no longer dominate the field unchallenged. At the same time, Wright candidly faces some of capitalism's serious problems, and cannot be described as a reactionary defender of the *status quo.* Wisely, in my opinion, he has committed his faith to creative individualism as the means to peaceful and constructive social change, free of stultifying political centralization and of an impossible demand for angelic human beings.

On the negative side, I regard his failure to grapple with the question of

imperialism an unfortunate omission. Also, reference to capitalism's statistical record concerning real income would have strengthened the total assessment. Regarding unions and monopoly, he has had the courage to face the problem, but without really suggesting an approach. I believe that the power of the unions to set the whole wage level is greatly overrated. Their gains, real and monetary—as Marshall recognized years ago—are far more the effect of market forces, particularly inflation, than a result of "bargaining power" as such. Once this is seen, monetary policy becomes the crucial instrument for control.

Otherwise, this book is an important contribution to a growing literature, in turn characterized by a much higher level of discussion. One may only hope that this development is not too late to have significant effect.

GEORGE H. HILDEBRAND

University of California
Los Angeles, California

From Wealth To Welfare: The Evolution of Liberalism. By HARRY K. GIRVETZ. (Stanford: Stanford University Press. 1950. Pp. xiii, 323. $5.00.)

"Benthamism was a coherent system; its ethics, its constitutional theories, its jurisprudence, and its political economy were indissolubly linked together, and were indeed different aspects of one and the same theory of life and human nature" (p. viii). Thus, quoting from Dicey's *Law and Public Opinion in England,* the author proposes not only to demolish the Benthamite system and its latter-day Spencerian offspring, but to replace it in the same grand manner, defying "the boundaries by which social scientists have defined, often too neatly, the separate spheres of interest," by the system of "contemporary" liberalism. The title suggests a smooth evolutionary process as contemporary liberalism emerges from classical liberalism. This, in turn, was based on the psychological and political creeds of the 17th and 18th century, which "led the orthodox economist to concentrate on wealth to the neglect of welfare" (p. 148).

The psychological creed was a compound of four basic assumptions, the "four articles of liberal faith": (1) the psychological or enlightened egoism of Hobbes and its Benthamite variant of hedonism, (2) the assumption that man is rational, (3) psychological quietism, as distinct from political quietism, which assumes that man is indolent by nature, and (4) the atomistic view of "independent, homogeneous, unitary existences" (p. 21), who according to John Stuart Mill, are "obedient to the laws of individual human nature" (p. 23).

The selfish who are industrious "must be made secure in the possession, enjoyment and disposition of the fruit of labor" (p. 28), they must be "free to choose the task at which we shall labor" (p. 32). The indolent must "not have access to the fruits of toil without toiling" (p. 33). That takes care of the Benthamite creature whose "aversion to labor" is notorious. Thus, economic incentives are based either on fear and want or on invulnerable

sacred property rights (derived from Roman Law and anchored in the natural right doctrine).

This doctrine, however, led to conflicting conclusions. From Locke's conception of property "followed certain unexpected consequences." One may interpret such rights (a) in the medieval sense as *jus procurandi et dispensandi,* (b) with extreme individualism as *jus utendi, fruendi, ac abutendi,* (c) as functional, *e.g.,* in relation to social needs (as suggested by "contemporary" liberals), (d) as egalitarian ("If property is essential to the development of man's natural liberty, it ought not to be enjoyed exclusively by the few, as an odious privilege; all ought to be owners of property. Thus the same theory of natural rights which consecrated individual property . . . issued in the opposite conception, namely, Communism" [p. 89], quoted from Guido de Ruggiero, *The History of European Liberalism* [p. 27]). Both Bentham and Burke turned against jusnaturalism, when they realized the revolutionary implications of this doctrine.

The author carefully examines the divergencies and contradictions inherent in the *laissez-faire* system regarding the assignment of certain functions to the state, the limitations of political power, constitutionalism and the division of power. But he naïvely assumes that once the inconsistencies of the psychological and political creeds become apparent and are understood, and the underpinnings thus removed, the whole superstructure of the economic creed would come tumbling down (and without too close a critical analysis). In twenty pages he disposes of neo-classical assumptions, the "frictions" and "exceptions," simply summarizing what institutional economists have said before, and perhaps better. The orthodox economist is criticized for deriving concepts like the profit motive from the psychological creed of egoism, and for explaining it "without reference to its institutional origins and historical antecedents" (p. 131).

But the author, squeezing his material into a moderately sized book, too often omits or minimizes "institutional origins" and "historical antecedents." No mention is made of the rôle of the Middle West in starting the assault upon our *laissez-faire* system in the 70's and 80's, nor does he examine satisfactorily the baffling dualism between private (orthodox noninterventionist) theory and public (interventionist) practice. The rational arguments of the 18th century have become the accepted myths of our Middletowns. And it is harder to demolish myths than rational arguments. The popular constitutional monarch (with an adequate bank account), a composite of the Hobbesian "enlightened" egoist, the pleasure-seeking hedonist, the coolly calculating, independently acting individual isn't just a caricature drawn by the jovial von Mises. He has been accepted in our folklore as the object of affection, wooed through every means of communication, except mesmerism.

The author identifies his economic credo with that of "the rapidly growing (?) group of economists whose thinking has been influenced by Keynes and Hansen," "the professional economists of the contemporary liberal school" (p. 190), who have now come to realize that the profit system is inadequate to provide purchasing power for "goods whose manufacture would keep

idle workers and idle plants continuously employed" (p. 190). Interventionist arguments from the Beveridge Plan to Hansen's anti-cyclical remedial policies are summarized and blended with the author's social objectives.

For effective control of monopolistic concentration and pricing, he would (1) require federal charters of incorporation exclusively (as suggested by the traditionalist Henry Simons); (2) expand powers and funds of all quasi-judicial federal commissions (a horrible phrase, "Commissional Revolution," is coined to match, I presume, an equally horrible one, Burnham's *Managerial Revolution*); (3) apply the "Yardstick" principle proposed by New Dealers. "A publicly owned steel, automobile, or even cigarette manufacturing enterprise, subject to the same taxes and competing on equal terms with private enterprises in these fields, might accomplish miracles in exposing price-fixing arrangements and bringing a superior article to the public" (p. 256). One wonders.

Liberals now "relate welfare to the expansion of production in a dynamic society." They "no longer discuss welfare merely in terms of humanitarian regards" for disabled, *etc.* Still, the first objective of the welfare state should be: "the readjustment of incomes in order to provide adequately for the disabled and disadvantaged" (p. 231). Theodore Roosevelt (in a letter to his friend Jacob Riis) once proposed "to achieve by legislation . . . the diffusion of wealth in such a manner as will measurably avoid the extremes of swollen fortunes and grinding poverty." Thus, Theodore Roosevelt may have accepted the "contemporary" liberal's objectives, and yet rejected the welfare state *in toto.*

The author would have us believe that there is a clear-cut division between classical and "contemporary" liberalism, and that the latter constitutes a cohesive and influential force based upon a number of unifying principles, formulated by "the professional economists of the contemporary liberal school." Anyone acquainted with the economic literature of the last few years, even superficially, would have to challenge this position.

"It was the object of the Physiocrats," wrote James Mill (*Elements of Political Economy,* p. 76), "to transform society without a revolution by taking their stand upon a small number of theoretical principles." This is precisely what the so-called contemporary liberal is attempting to achieve. The dichotomy in liberal thinking stems from two basic facts: (1) though liberals may agree on social objectives, they sharply disagree on methods; (2) though they accept the meliorative functions of the state, they are poles apart on the extent of intervention (how far can we extend the powers of the state without creating a revolutionary situation?). Dicey objected to the Ten Hours Act in Britain though it "has put an end to much suffering." But it "has tended towards socialism, and contains within it the germs of an unlimited revolution, of which no man can as yet weigh with confidence the benefits against the evils . . ." (p. 61). Hayek, the *bête noire* of the "contemporary" liberal, attacked Keynes' interventionist recommendations. Yet, according to Harrod, Keynes was quite impressed with the *Road to Serfdom* arguments against the welfare state.

In his review (*New Statesman,* May 26, 1951) of *Restatement of Liberty*

by P. C. Gordon Walker (a former Minister in the Labor Cabinet), R. H. S. Crossman, a Labor M.P., chides his colleague for calling halt to experimentations, for preferring consolidation now, and for resurrecting the economic man in a new garb. Classical liberals would be appalled by the following quotation from Walker's book:

> Once the State discharges on behalf of society the main social obligations that attach to wealth (*i.e.*, introduces full social security), then industry, whether in public or private hands, can without scruple regard man at his place of work as economic man and nothing else. . . . It can concentrate solely upon the end of economic efficiency.

And the Socialist Crossman, too, is annoyed by "this repellent picture of Socialist regimentation." Walker, true to classical tradition, fears that a social transformation may lead to a revolutionary situation, while Crossman insists that the failure to fully realize a Socialist program would drive British workers into the arms of Communism! *Experto credite!*

Space does not permit further discussion of complexities besetting contemporary liberalism. Rent by centrifugal forces, harried and confused, it simply cannot fit into a neatly devised "coherent" system (*à la* Bentham). Dr. Girvetz has written a highly stimulating, well-documented and, in some respects, unique treatise. But its influence upon our time (as compared to Bentham's upon his) will, I fear, be quite negligible.

Frederick Sethur

The City College of New York

The Social Crisis of Our Time. By Wilhelm Röpke. (Chicago: University of Chicago Press. 1950. Pp. 260. $3.50.)

This book by the distinguished German economist, first published in Switzerland in 1941, has lost none of its freshness and has perhaps gained something in impact in the intervening years. Like the hapless Louis XVI, whom he quotes, one is tempted to say: "I have seen all this coming for the past ten years. How was it possible that I never wanted to believe it?"

The disease which is spreading throughout Western civilization "is characterized by a process of social decomposition and agglomeration for which the term 'collectivization' has been coined" (p. 10), a term which would include communism no less then capitalism. The root of the evil is massism, as Ortega y Gasset described it, and the resulting "proletarization," urbanization and mechanization of life. Gradually these forces destroy the protective integument of faith and conviction, which a secularized Christianity left in its wake—an integument without which man not only loses a certain natural sureness of instinct but the sense of elementary human relationships as well. Röpke is only too conscious of the limits of rationalism, of the Unconditional and the Absolute, and expresses deep respect and reverence for the traditional, the proven and the pre-capitalist.

He is exceedingly critical—and in this he is certainly not alone—of the foundations of 19th century economic thinking. Liberalism and socialism have erred in making rational economic man the keystone of their models—

the former mainly by losing sight of the necessary political and sociological conditions circumscribing a free market, the latter by regarding society as a machine. "Socialism is not a utopia, but a tragedy" (p. 153). The original sin is economism, "making material and economic interests the center of things by deducing everything from them and subordinating everything to them" (p. 53).

Mass society leads not only to "politicalization" of economic processes, but ultimately to the tyrannical, totalitarian state. "The executioner has the last word in the socialist state" (p. 98). Certain political and economic systems always go hand in hand, it being impossible to combine just any political system with just any economic system. Economic planning is just another name for socialism and both lead inevitably to tyranny. This of course sounds like Hayek, but the reader will at least have to concede that Röpke is the sophisticated man's Hayek.

The second part of the book deals with action to be taken. Röpke recommends the "Third Way" consisting of decentralization, promotion of small units of production, ruralization, prevention of monopolies, "development of new, nonproletarian forms of industry," elimination of over-complicated methods of organization, specialization and division of labor and "sensible limitation of state intervention according to the rules of, and in keeping with, the market economy." He points to Switzerland, where he now teaches, as a model of such a society, corresponding largely to his program. The peasant and the artisan represent to him an ideal way of life and the small entrepreneur is preferable both to capitalistic enterprise and to socialism.

It is perhaps in this part that many readers will part company with the author. His analysis, so similar to Ortega, Benda, Schumpeter (in his last phase), and reminiscent of much in Sismondi, Proudhon, Ruskin and others, is accepted by many intellectuals, especially in Europe. Some will express doubt about the inevitable road of a planned economy to totalitarianism. They will perhaps accuse Röpke of having himself succumbed to infatuation with the unconditional and the absolute. The major criticism to be made has to do with his preference for a small-scale, decentralized, Jeffersonian economy, his "reduction of all dimensions and conditions to the human mean." However desirable that might be, and in all probability is, it is more than unlikely that large-scale production will be abandoned, industry demechanized and, in general, much of the latter phases of the industrial revolution undone. On the contrary, the process of mechanization and massization is rapidly spreading all over the globe, with the underdeveloped countries avidly seizing their opportunity to travel the road of the West. Rearmament is adding another dimension to mass society, making output of strategic materials even more compulsive and political controls ever more universal. Thus, even assuming that rational economic man be given up, it would appear that rational military man will perpetuate and intensify all those aspects of modern society condemned and abhorred by Röpke.

It is difficult, in spite of the foregoing, not to admire Röpke's grasp of literary material as well as his encyclopedic familiarity with the economic and social realities of our age. His views undoubtedly represent the

quintessence of liberal and humanist thought of contemporary Europe, not so much in their details of analysis and conclusion, as in the general atmosphere of hostility to mechanical, soulless bigness. They will therefore arouse the wrath of many Americans no less than that of Russian and other communists. Perhaps, after all, Röpke's disillusionment with modern civilization is only an expression of the lassitude which two world wars have left in their wake in an old and weary continent. It is a book worth reading and heeding.

FRANK MUNK

Reed College

National Income and Social Accounting

National Income Behavior: An Introduction to Algebraic Analysis. By THOMAS C. SCHELLING. (New York: McGraw-Hill. 1951. Pp. x, 291. $4.50.)

This book discusses in great detail a part of the material that would ordinarily be covered in a course on income and employment. It deals elaborately with the theoretical relationships between national income and its components and is reminiscent of the article on "Simple Mathematics of Income Determination" by Paul Samuelson in *Income, Employment and Public Policy: Essays in Honor of Alvin H. Hansen*. Schelling has made his book even simpler, however, in that he does not use any calculus at all. The book requires a knowledge only of the most elementary algebra and might have been called *Simpler Mathematics of Income Determination.* The rather frightening impression one gets on leafing through the book is not substantiated on reading it. There is a clear and orderly development and explanation of the algebraic techniques used. For instance, such concepts as identity, intercepts, parameters, and the process of solving equations are explained. The economic concepts used are also elucidated.

The major part of the book is devoted to a "static" analysis of the components of national income. (Schelling confines the term "dynamics" to problems which in some "essential way involves chronological sequences of time.") Thus the book deals mainly with relationships that do not have time subscripts and do not involve sequence analysis. This will be disappointing to those who would like to begin their exposition of national income problems through the use of time periods and the relationship between different time periods.

The book has an important merit in that it brings to the attention of the reader at a very early stage the place of inventory fluctuations in income analysis, but one might question the author's mechanistic approach. His analysis is based on the assumption that any depletion of inventories results in a replenishment. The possibility that expectations might be changed during the period of depletion, and therefore that any previously determined policy concerning inventories might be altered, is not considered. Thus the Swedish distinction between intended and unintended inventory changes and the different effects they will have on expectations concerning the future are not

incorporated in the analysis. It must be recognized that the depletion of inventories does not in itself provide a basis for concluding that inventories will be restored to their previous level. Even under restrictive assumptions which would prevent outside influences on expectations, the mere nature of the original depletion of the inventories may affect business outlook and policy concerning inventory accumulation.

This is only one example of the tendency to use a very elementary set of assumptions in spite of the length of the book as a whole and the elaborate detail in which some problems are treated. Another example is the discussion of the acceleration principle, which is on traditional, simplified lines. Schelling does, however, introduce some sophistication into his analysis through the concept of "anticipated sales."

This book provides a valuable exercise for the student of national income. It contains little that is new to the specialist in income theory and it leaves out much theoretical material and nearly all statistical analysis that have appeared in recent years. It does not contain a discussion of the development of national income analysis, nor a consideration of the problem of estimating national income, nor a review of the efforts at a statistical testing of the behavior relationships of the components of national income.

A prospective reader should bear in mind, however, that this book is intended, as its sub-title indicates, merely as "an introduction to algebraic analysis." The book is designedly concerned more with technique than with substance; hence, some of the fundamental problems of "national income behavior" are not considered in detail. For instance, in a study entitled National Income *Behavior,* the reader may expect a statistical treatment of the consumption function. However, there is only a brief reference to Duesenberry's work and no discussion of Modigliani's contribution to this subject. Studies that have been made along statistical lines in an attempt to determine the numerical magnitude of the parameters involved in the national income equations—notably those by Tinbergen—are not considered. The book does, however, provide a good background for a study of such statistical efforts. It fulfills its intended—and restricted—purpose of providing an introduction to the use of algebraic techniques in the theoretical analysis of national income and its components.

HAROLD M. SOMERS

University of Buffalo

Studies in Income and Wealth, Volume 12. (New York: National Bureau of Economic Research. 1950. Pp. xiv, 585. $6.00.)

This volume contains papers presented at the January, 1948 meetings of the Conference on Research in Income and Wealth and comments thereon made by participants in the Conference who did not themselves deliver papers. The introduction by Morris A Copeland is, in many respects, one of the most valuable parts of the whole and more of this will appear below.

The first paper by R. W. Goldsmith on "Measuring National Wealth in a System of Social Accounting" makes interesting distinctions between national business accounting, on the one hand, and national economic accounting, on

the other. The distinction rests largely on the view that "national economic accounting, then, is a combination of the technique of double entry accounting with market values of transactions, assets, and liabilities, adjusted to conform to the requirements of economic theory as it is now understood by a large body of professional opinion." The discussion of this distinction is of real interest but, as the author himself suggests, ". . . the theory of national economic accounting is . . . not uncontroversial. . . ."

The second paper by A. G. Hart on the uses of national wealth estimates and the structure of claims contains very interesting comments concerning the manner in which claims of various types must be dealt with. It is interesting and relevant to note that one of the participants in the conference, Gardner C. Means, points out that the methods followed by Professor Hart suggest that the title of the paper should be "Uses of National *Assets* Estimates" rather than "Uses of National *Wealth* Estimates," and points out some real conflicts which cannot be resolved in the absence of more precise use of these terms.

Part II consists of nine papers on wealth estimates for various sectors of the economy. R. J. Burroughs writes on the agricultural segment; L. A. Reuss on land utilization data as background information for the national balance sheet and attempts some approximations of the value of forest land; H. Foster Bain and others deal with the problems of estimating subsoil wealth, while M. R. Gainsbrugh and Lucie Krassa concern themselves with the problem of the balance sheet of manufacturing enterprises. D. A. Kosh writes on the tangible assets of public utilities; G. M. Cobren on the nonfarm business inventory component; Lenore A. Epstein on consumers' tangible assets; J. E. Reeve and others on the government component in the national wealth; Solomon Fabricant on government-owned non-military assets since 1900; and the volume concludes with a paper by R. L. Sammons on foreign investment aspects of measuring national wealth.

While the papers in Part II are interesting, most economists concerned with social accounting and with the measurement of income and of wealth will find more of interest in the nature of the case in Part I. This results from the decision to put the papers dealing with "over-all assignments" in Part I and those dealing with a special "wealth sector" in Part II. In particular, I call attention to "A Note on Negotiable Claims" by Copeland in which certain aspects of the study of money flows, in which he has been engaged, are discussed.

While the attempt to develop measurements of wealth of a kind providing an accounting analogy to the measurements of income developed in recent years is interesting and important, and while this volume is a contribution thereto, this reviewer finds Dr. Copeland's introduction of great value in an attempt to understand the difficulties to be faced in such an enterprise. More particularly, Copeland's summary of the areas of agreement and disagreement among the participants (pp. 7-15) is valuable. Many of the disagreements arise from the views of the participants concerning the theoretical basis for determining the constituents of wealth. Others stem from the conviction that the measurement of wealth, in essence, involves a "wel-

fare appraisal," although the notion of welfare is here, as elsewhere, vague. Areas of agreement concerning the problem to which this volume is addressed were, however, achieved and should be important in determining the direction of subsequent efforts. We may look forward to continued refinement and to extended efforts at measurement by the Conference on Income and Wealth. The achievement to date is promising.

FRANK L. KIDNER

University of California
Berkeley, California

Business Fluctuations; Prices

Business Cycles and National Income. By ALVIN H. HANSEN. (New York: W. W. Norton & Co. 1951. Pp. xv, 639.)

This bulky volume is a brief survey of a wide field. Part I, on the nature of business cycles, presents in ninety odd pages a statistical account of "major" cycles in the United States since 1872, using Frickey's index of production of durable manufactures; a note on the existence of long building cycles in the United States with their chronology; a comment on secular swings in price level, on "long waves," and on growth trends in real processes; and, in conclusion, a statistical picture of investment during business cycles as reflected in national income components for this country, largely since 1929. Part II, on the theory of income and employment, deals, in about 120 pages, with national income definitions and the meaning of a nation's economic budget, and then largely with the quantitative and quasi-mathematical concepts and "functions" of current macro theory—saving, investment, consumption, the multipliers, the accelerators, the propensities, etc.—concluding with a chapter on government outlays, again in a formal exposition of effects on investment and consumption. Part III, 290 pages and the longest of all, is a historical review of business cycle theory, from Lord Lauderdale to Wesley Mitchell, the theories grouped by dominant approach (aggregate demand, confidence and credit, the rôle of investment, etc.), with one supplementary chapter by Richard Goodwin on the econometric approach to business cycle analysis, and others on recent developments in analysis of oscillation and growth (Domar, Harrod, Hicks) and on the foundation stones and basic framework of business cycle theory. Part IV deals, in about 100 pages, with business cycles and public policy, ranging from comments on recent issues and policy recommendations to a survey of forecasters and statistical indicators, and concludes with a chapter on international effects.

The discussion throughout is concise, illuminatingly clear, and reflects Professor Hansen's firm adherence to Keynesian emphasis on investment as the strategic element in business cycles, and his faith in the corresponding type of reasoning as a basis for understanding economic processes and formulating economic policy. The book attempts a summary of wide literature, and thus constitutes a highly useful reference volume. And surely it more than satisfies the purpose which the author unduly minimizes in the Preface when he de-

scribes it as "a modest contribution to a better understanding of the current theory and historical development of macro-economics" (p. vii).

The volume may be taken as designed for that purpose exclusively, to acquaint readers with economists' writings about business cycles and with the theoretical analysis of income and employment relating thereto. If so, we would have to refer back to the authors quoted or summarized (including Professor Hansen himself) and to those omitted—to see how well their views have been set forth and how justifiable were the omissions. For such a task the present reviewer has neither the competence nor the urge. Professor Hansen not only describes the theories and models, but also passes judgment on them, in the light of what is known about business cycles and related phenomena—presumably from empirical data. And in so doing, he gives this reviewer an opportunity to ask why we should be interested in past or current economic theory bearing on business cycles. Obviously we are interested in this theory and research not only as a history of intellectual processes as such or of opinions that influenced public or private policy in the past or may influence it currently, but chiefly because they may shed light on the characteristics of business cycles as they transpired in observable reality, and may help explain these fluctuations in the rate of economic activity by relating them to other parts of the organized body of established knowledge.

From this viewpoint the book gives rise to several disturbing questions, some of which are presented with hesitation because they raise fundamental issues for which a review is scarcely an appropriate medium.

1. If the empirically observed characteristics of business cycles, classified with respect to their occurrence in time and space, define the task of business cycle theory and provide the touchstone by which its adequacy can be judged, is the discussion in Part I at all adequate, particularly in view of the elaborate classification of types of cycle and of patterns of movement over time that Professor Hansen erects? In his discussion, Professor Hansen refers fleetingly to major cycles, minor cycles, "long waves," building cycles, secular swings in price levels, and illustrates them with data almost exclusively for the United States. Which of this welter of types of movement is business cycle theory supposed to explain? What are the invariant or approximately invariant characteristics of business cycles that theory must recognize and account for? It is difficult to see how a theory can be judged unless its empirical referent is clearly defined and the outstanding characteristics of that referent are established.

2. A theory of business cycles is presumably something more than a model to show how a cycle, of vaguely defined duration (4 years, 15 years?) and of variable amplitude and generality, is *possible*. Human imagination is fertile enough to produce such models by the dozen. Each such model naturally contains some realistic element since one's imagination can feed only upon observations of the material world no matter how distorted. But it is equally true that each such model, viewed as more than a formal demonstration of one of the many possible ways in which a cycle *can* occur, will be found deficient, since it omits some variables and fails to assign weight to those that it stresses. The task of business cycle theory is presumably more ambitious:

to explain common characteristics of business cycles as they are observed within certain broad limits of economic history. This task of explanation can be spelled out by: (a) setting the historical limits of the phenomenon (in space and time); (b) measuring or otherwise recording its recurrent and variant characteristics for the national economies and their important components, within the limits set under (a); (c) maximizing the elements of empirical observation and minimizing the elements of "assumption" in tying cyclical phenomena to their determinants, *viz.*, to other knowledge concerning economic behavior. In the light of these considerations the question raised under (1) concerning Part I of the volume assumes particular meaning and one wonders why in Part II, the bulk of the discussion (Chaps. 9-12) which presents the propensities, the accelerators, the multipliers, the "functions," is completely bare of any empirical evidence (excepting a chart on stock and replacement of passenger cars in the United States, Figure 53, p. 189). All these tools and models of the current theory of income and employment are useful indeed. But they are manifestly incomplete for business cycle analysis: the neglect throughout of price movements and of the price element in general is particularly conspicuous. One could derive models of cycles from assumed price changes and differing propensities of different price groups just as easily as from accelerators, multipliers, and functions envisaged for economic magnitudes in "real" (*i.e.*, constant price) terms. Nor does there seem to be much evidence in this volume of the urge to fit the models to the observed reality, and gauge their weight. Surely, the time has come for these analytical tools, each necessarily partial and limited, to be tested within the framework of empirically observed cyclical processes.

3. The comments just made indicate the question that is raised by Professor Hansen's lengthy review of business cycle theories in Part III. I assume that both Professor Hansen and his readers are only mildly interested in such an account as a history of intellectual struggles, which illuminate the capacity of human mind when confronted with a complex phenomenon with no possibility of experimental control and with strong pressure for defensible answers that would justify policy. I assume that both Professor Hansen and his readers are more interested in the substantive value of these theories, in their possible explanation of business cycles as they occur. But we get no such distillation of what is valid in each group of theories. Even if data and analytical tools are insufficient for a thorough appraisal that would succeed in attaching weights to factors stressed by one or another theory, an attempt at appraisal should be made if these theories are to be used as hypotheses for analysis of observable reality.

Greater emphasis in this direction might have obviated a type of value judgment which this reviewer finds it difficult to accept. Hobson's contribution is minimized (p. 255) because it seems to Professor Hansen that he does not add much to Lauderdale and Malthus in the movement toward current theory of income and employment—as if this were an important criterion. Tugan-Baranowsky is lauded as a great pioneer (p. 281) although one can easily argue that much of his emphasis on investment processes came from Marx. (Curiously, Marx is given little room in the long survey of theories.)

Wesley Mitchell is blamed explicitly for not recognizing the significance for business cycle analysis of this reviewer's estimates of national income and capital formation (p. 408) and implicitly for rendering business cycles a "popular and agreeable concept" (p. 395). Perhaps, in the absence of established knowledge, one can judge past theories only in terms of their distance from current theoretical notions and in the light of one's general preconceptions and impressions. But obviously such a practice leads easily to abuse.

4. Although in his account of theories Professor Hansen inevitably recognizes the historically changing *view* of business cycle phenomena, he appears to be little concerned with the historically changing characteristics of business cycles themselves. The latter may in large part explain the former. For example, the shift in emphasis from "commercial crises" to "cycles in investment" may reflect the changing features of cycles in an economy shifting from domination by commercial capital to domination by industrial capital. Even more important, greater attention to the changing historical framework of business cycles might have led to a readier recognition of much of economic theory as an attempt to generalize, and a tendency to over-generalize, certain recently emerged features of the economic process—which may not have been prominent in the past and which, in their recent emergence, gave rise to economic problems that cried for a new theoretical base for their solution. One wonders to what extent the easy acceptance of Keynesian theory, with its emphasis on the limited effect of changes in interest rates and wage rates in adjusting the economy to short-term swings—particularly the reductions as adjustments for pulling the economy out of a depression—was due, almost unconsciously, to a demonstration provided by relatively recent changes in the structure of the economy in Western countries. It was the emergence of large industrial firms, independent of bank credit, resistant to price competition, and capable of weathering a depression of almost any magnitude, and the high standards of living, large relative reductions in which did not mean starvation, that permitted the development of a downward spiral of contraction during a business depression to much lower levels than could be envisaged in times of smaller firms, price competition, widespread failures, and standards of living that provided a relatively "high" floor for consumer expenditures. The Keynesian "revolution," like all other revolutions in economic theory, may be viewed as an attempt to rationalize a relatively recent change in economic processes into some general theory that would provide a basis for intelligent policy action. While this explains the rapid spread and the practical usefulness of such "revolutions," it also indicates that, almost in the nature of the case, an economic theory so evolved tends to exaggerate the area of its application, in time and space, as well as to overstate the degree to which the newly stressed factors do in fact displace those emphasized in the earlier "revolutions." Greater emphasis on historical conditions in which business cycles occur and on the historically changing basis for reformulations in economic theory, might have led to a more circumspect appraisal of the policy problems—the discussion of which in Professor Hansen's book is still dominated by his earlier translation of the Keynesian apparatus into a theory of secular stagnation.

I would be the first to regret it if these questions and comments were interpreted as representing an adverse judgment on Professor Hansen's book as a contribution to the literature of economic scholarship. They refer rather to a broad field of that economic scholarship itself; and it is because Professor Hansen's volume is such an extensive and clear review of that broad area that these questions and comments seemed appropriate.

SIMON KUZNETS

University of Pennsylvania

Defense Without Inflation. By ALBERT G. HART. (New York: Twentieth Century Fund. 1951. Pp. xiv, 186. $2.00.)

Financing Defense. By ALBERT G. HART and E. CARY BROWN, assisted by H. F. Rasmussen. (New York: Twentieth Century Fund. 1951. Pp. xiv, 161. $2.00.)

Defense Without Inflation and *Financing Defense* are the first two volumes of a four-volume series on the problems of stabilization in a mobilized economy, published in the spring and midsummer of 1951, respectively. Separate studies of direct controls and monetary policy are to follow. The entire series is being produced under the direction of Albert G. Hart for the Twentieth Century Fund. The reports by the authors are supplemented by recommendations for economic policy by a specially constituted Committee on Economic Stabilization. The Committee members are: John Maurice Clark, chairman; Theodore W. Schultz; Arthur Smithies; and Donald H. Wallace.

Both reports and recommendations are brief and are written for the general public. Teachers looking for current material on stabilization problems to supplement their courses should find both books useful.

Defense Without Inflation, published first, was "designed as an over-all review of general strategy." It opens with an outline of current defense goals and takes up in turn the problem of full mobilization, the strategy of readiness, inflation, direct controls, budget policy, monetary policy, and finally presents some thoughts of the author on the best strategy to follow in the period ahead. The recommendations of the Committee on Economic Stabilization are contained in a brief concluding chapter.

Financing Defense concentrates on the national budget and the various methods of raising federal revenues to avoid the inflationary repercussions of greatly increased defense expenditures. The first two chapters are designed to give the theoretical and factual basis for the subsequent analysis of specific measures. Concluding that greatly increased taxes are required, Hart and Brown make a short digression in the next chapter on subsidies and tariffs which they treat as measures which may run counter to the general rule "that it is inflationary to increase government outgo or to cut government receipts." The next four chapters concentrate on the advantages and limitations of various tax measures, taking up in turn, commodity taxes, personal taxes (other than income), the personal income tax, and taxes on profits. The un-

certainties of both federal receipts and expenditures and some suggestions about budgeting under such conditions are discussed in the final chapter. The report of the Committee on Economic Stabilization follows.

In *Defense Without Inflation,* Hart stresses the importance of budget policy and monetary policy, and it is his judgment that major tax increases and further credit controls should be used to restrict consumer and business spending. The necessity for direct controls of prices, wages and the allocation of materials is accepted by both the author and the Committee on Economic Stabilization, although the Committee suggests in its recommendations at the end that a much less extensive control program might have been adequate had the fiscal and monetary powers of the government been used more effectively. They state, "At the time we write, the government has decided to resort to comprehensive direct controls. We see no point in debating the necessity of that decision, *although we believe that had an adequate fiscal and monetary policy been pursued, we might have been able to work out a control system on a selective basis.* Its continued adequacy would depend on the absence of an inflationary wage push. Furthermore, this is an appropriate time to stress the dangers of undue reliance on a direct control system. We now run a serious risk that present policy will reproduce that of World War II, rather than be adapted to the needs of the present mobilization." (Italics added.) Hart shares the Committee's fear of the breakdown of direct controls and is equally strong in his support of the maximum use of monetary and fiscal policies, but both fail to develop a program of selective controls that could be considered an alternative to the comprehensive program to which the government is committed at the moment.

In *Defense Without Inflation,* Hart does an excellent job of analyzing the effects of increased production upon the inflationary trend over the next few years although it is the hunch of the reviewer that he may have underrated the significance of increasing productivity as a factor lessening the severity of the cutbacks in consumer goods and the inflationary influence of rising wages. The possibilities of changing levels of savings are also largely neglected although the spectacular increase in saving in the second quarter of this year may possibly be evidence of the importance of this variable in the situation, though the defects of the saving statistics make this factor uncertain.

Although Hart concludes that direct price and wage controls are essential, he places great stress upon the use of indirect controls to reduce the margin of excess demand. The delay in tax legislation and the weakening of the extended Defense Production Act emphasize the obstacles to the passage of legislation that will give us the sort of balance in our stabilization program that he wants. This he does not discuss and it still remains as the number one problem of the day.

Conclusions of the Committee on Economic Stabilization at the end of *Defense Without Inflation* which are of special interest are in line with the analysis of Hart. They support a tax program designed to raise $16 billion in a full year, of which some $9 or $10 billions should be raised by the personal income tax, $4 billion largely from the corporation normal tax and

the balance from excise taxes. They also stress the importance of voluntary acceptance of a government administered limitation of wage increases. They also believe that this is the time to increase the size and coverage of the social security program. They end with a strong affirmation of the capacity of the American economy to meet the cost of the defense program and to continue to expand.

Financing Defense does not depart from the general position developed in *Defense Without Inflation.* The question of the best tax policy to follow is discussed by the two authors with objectivity and notable lack of dogmatism. In the discussion of the place of a sales tax there is even a footnote indicating a difference between the two authors as to the rôle it should play in the anti-inflation program. One of the most useful parts of this volume is the analysis of various proposals to use new types of taxes as anti-inflationary devices. This includes the spendings tax, compulsory savings, taxes on increases in income and a tax on net-worth.

The emphasis of the authors and the Committee on Economic Stabilization upon the dangers of the reaction of labor to increased sales or excise taxes which would raise the price of goods to the consumer is well taken but they neglect the equally troublesome reaction of labor to a reduction in take-home pay as the result of an increase in personal income taxes deducted at the source.

The conclusions of the Committee on Economic Stabilization stress the need to "keep the economy as free as possible . . . to safeguard productive efficiency and work incentives, to keep the door of economic opportunity open and to keep economic policy adaptable for future changes." They repeat their recommendation of a $16 billion increase in revenues and point out that if it proves to be larger than necessary it is easy to reduce, much easier than to increase an inadequate program.

These two books are admirably designed to serve the purpose for which they were published by the Twentieth Century Fund. There is no current material which gives the average citizen as clear, objective and comprehensive a picture of the issues of stabilization policy. These studies have the field to themselves and should be widely used as long as the defense crisis is with us.

PAUL J. STRAYER

Princeton University

Personal Income Tax Reduction in a Business Contraction. By MELVIN I. WHITE. (New York: Columbia University Press. 1951. Pp. 144. $2.50.)

This interesting study is an attempt to quantify one of the most important and troublesome aspects of fiscal policy—that of the tax reduction necessary to combat declines in personal income in the contraction phase of the cycle. The analysis indicates the shortcomings of automatic compensatory movements of tax revenues usually associated with "built-in-flexibility" tax programs and points out the advantages of adjustments through rate and exemption changes in the personal income tax.

The first half of the study presents the potential anti-deflationary con-

tributions of personal income tax reduction under the assumption that there are no timing difficulties to curtail the effectiveness of the tax reduction. A model is established, and three specific plans are examined in this context: (1) a plan revealing the effectiveness of "built-in-flexibility" with 1945 surtax rates and personal exemptions unchanged from the peak year throughout the contraction; (2) a plan calling for a 50 per cent increase in personal exemptions; and (3) a plan similarly increasing exemptions while also cutting the first surtax bracket rates to zero. The goal set for these plans is the prevention of a decline in personal factor income (personal income minus transfer payments) of more than 10 per cent or $22 billion from the peak year.

The hypothetical business contraction is described in terms of deviations from expenditure and income accounts for the peak year (with a GNP near that of 1950). To show the relative effectiveness of the three plans the aforementioned allowable 10 per cent decline is assumed to exist in the contraction. The effect of this decline on personal consumption expenditure (under the three plans) is estimated together with the resulting declines in net business expenditure (investment) that are permissible in order to stay within the limits of the 10 per cent goal. The maximum permissible declines in net business expenditure for plans (1) through (3) range between $12 and $24 billion respectively or from 50 per cent to 133 per cent of peak year investment thus showing the greater counter-deflationary potentialities of exemption and rate changes.

The second half of the book demonstrates the significance of appropriate timing. A formula for timing tax cuts is developed using the three plans mentioned and another alternative of a uniform 10 per cent reduction in computed tax bills. The formula designates the proper plan as personal factor income deviates below a peak reference period. The successful operation of the formula depends upon the pattern of decline that is followed by investment during the contraction. The limits to this pattern are specified for annual and semi-annual programs of tax change and for decline periods of one to three years. The conclusions reached are that tax reduction will be more effective the longer the decline period and the more frequent the rate changes. The problem of timing is further emphasized and clarified by showing the maximum extent to which tax reduction can fail because of defective timing. The results of this thorough and rigorous analysis of timing are expressed in quantitative terms, and this is the outstanding feature of the book. One may wonder, however, if more allowance for qualitative changes during the contraction should be made—for example, are the differences in the *dollar* reductions of personal income resulting under the alternative plans the sole and sufficient basis for judging their relative effectiveness? Also what would be the effect of the tax reduction plans on the distribution of income?

In such a study there are necessarily many assumptions, and a commendable feature of this book is the devotion of a chapter to these assumptions and their relaxation. Also some space is devoted to the application of the analysis to the 1929-32 and 1937-38 contractions in the United States. These

are but a few of the good features of this book which, given the assumptions, does much to bring the theorizing over counter-cyclical activity to hard reality.

DONALD C. MILLER

Washington, D.C.

Money and Banking; Short-Term Credit; Consumer Finance

A Discussion of Money. By W. A. L. COULBORN. (New York: Longmans, Green and Co. 1951. Pp. xiv, 356. $3.50).

Among the many books that are written on or near the textbook level in the field of money and banking Coulborn's *A Discussion of Money* deserves special attention. Written by an Englishman and emphasizing British conditions, the book could not very well be used for a beginner's course in Money and Banking as taught in American colleges. But Coulborn's *Discussion* is in many respects so excellent that one can only hope that it will be widely used for collateral reading. Since Robertson's *Money*, no better written book has been published in the field. Coulborn's charming dialogues between Professor Harp and Dr. Carp should become as famous as Robertson's quotations from *Alice in Wonderland.*

As in Robertson, however, the facility with which the book is written is partly deceiving. The *Discussion* is a difficult book, possibly too difficult for the beginner. The difficulties stem from the fact that Coulborn has written a real economics of money and banking in which he wants to integrate the theory of money and general economic theory. The book is designed to lead to a thorough understanding of the problems and does not shy away from questions because they are difficult.

In reading the book I kept wondering why the chapters follow one another the way they do. But there are so many possible approaches of which none is clearly the best. Still, it is hard to see why a sketchy discussion of the Keynesian theory of the trade cycle should follow directly upon a thorough treatment of the quantity theory and precede the chapters devoted to alterations in the value of money and to central banks.

It also seems to me that some problems are much more thoroughly treated than others, with the result that the degree of difficulty varies substantially. Compare for instance the exhaustive treatment of the nature, services and origins of money with the rather meager remarks on saving and investment.

These criticisms, however, do not detract from the great value of the book, if the book is only used for collateral reading or for a second course in Money and Banking. Then the student will know anyhow where a given problem finds its proper place and the more advanced reader will feel equal to Coulborn's demands upon his analytical ability. For such use the book is excellent. It represents just the right mixture of theory, institutional descriptions and historical surveys. The selected problems are all of real interest to the economist. It is also to be noted with approval that the student will be exposed to what seems to be a fair mixture of old and new theory.

I could not find any important passages where my own opinions differ from Coulborn's by more than the degree of emphasis.

I want to urge teachers of the course in Money and Banking to make frequent use of this extremely well written book. It is a real contribution to a field which seems to be already oversupplied with texts of all varieties.

GEORGE N. HALM

Fletcher School of Law and Diplomacy

Segunda Reunión de Técnicos de los Bancos Centrales del Continente Americano. Banco Central de Chile. (Santiago: Imprenta Chile. 1950. Vol. I, pp. 379; Vol. II, pp. 254.)

These two volumes, the proceedings of the second (1949) meeting of American republic central bank technicians, show anew the progress that is being made in a vital area of international relations. The participants consisted of officials of most of the hemisphere's central banks (only Argentina and Brazil among the major nations were unrepresented) plus representatives of the International Monetary Fund, the International Bank for Reconstruction and Development, and the Economic Commission for Latin America.

Deliberations dealt with issues in four principal fields: inflationary and deflationary tendencies and countercyclical policies, foreign exchange problems, the rôle of monetary policy in over-all (domestic) economic stabilization, and central bank cooperation in dealing with common technical problems. Students of hemisphere economics will do well to consult the many papers, and the discussions thereof, to be found under each of these headings. Particularly noteworthy are the papers dealing with inter-bank cooperation on technical problems—those relating to statistical techniques, balance of payments, and national income.

The meetings could well be put on a biennial basis. This meeting followed the first by three years; but judging from the operating benefits obtained by the officials from their interchange of views, they could advantageously meet at shorter intervals.

There is not space to go into detailed criticism of the papers. On the inflation issue, however, I think the participants missed an opportunity to stress the need for vigorous taxation as an indispensable supplement to monetary action. In the distribution of assignments at the meetings, I would have preferred relatively more participation by the Latin American technicians and fewer papers by officials of the Federal Reserve System and the International Monetary Fund, inasmuch as the latter have ample facilities for the publication of their views. It is regrettable, too, that Brazil did not participate, both because of the relative importance of the country and the excellence of some of her central bank people.

The Central Bank of Chile, host for the meetings, and Dr. Herman Max and his research staff, who directed the arrangements, are to be congratulated for having given us an attractive two-volume record of the proceedings.

VIRGIL SALERA

Washington, D.C.

Business Finance; Investments and Security Markets; Insurance

Economics of Investment. By JACOB O. KAMM. (New York: American Book Company. 1951. Pp. xii, 547. $6.00; text ed., $4.50.)

Following the trend of investment writing since 1940, this and other post-war books on investments and security markets are particularly directed toward discussions of the management of portfolios. Professor Kamm has drawn on his experience as a teacher and as a practicing consultant to write a very readable text for the elementary student of investments, especially for liberal arts colleges and adult education groups where a minimum of financial and accounting background is assumed. While the author states his intention of dealing with the relations of investments to economic considerations, he has interpreted this as an economic analysis of the subjective factors affecting investment values rather than the relation of outside or market influences. Into this theoretical analysis of market prices in the long run has been injected a description of the more institutional details of security transactions in an effort to evolve both a theoretically sound and a practical text. The difficulties of writing such a book in logical sequence are great. Professor Kamm has made a valiant effort, although some readers might well quarrel with the order of development.

Investment is viewed as involving longer-term commitments of funds in securities for purposes of monetary income or capital gain, although the holding of cash in periods of falling prices is also identified as a source of gain. Speculation is held to involve only expectations of short-term capital gains. The investor under these conditions must emphasize internal analysis of the firm, while the speculator makes a more technical analysis of the existing and prospective market conditions. The author does not then proceed to evolve a theory of intrinsic value beyond the theoretical stages of capitalizing expected income and capital gains. Current yield "reflects not only the expected future yield but also expected changes in future annual income which cannot be reflected in the actual current return" (p. 295). While this line of reasoning is defensible, the identification of current yields and future yields leads to some logical difficulties. The author illustrates his approach mathematically with ingenuity. Incidentally, this reviewer has never found bonds maturing at 102, as the author states (p. 309).

On the more institutional side the author has, in general, written well. He espouses the use of investment funds and of formula plans, being particularly interested in variable stock-bond ratio plans based upon both stock-price and non-price indexes. Professional management of portfolios is described, but individual management is advocated, particularly for small funds. The author claims that most banks will not handle investment supervisory accounts of less than $100,000 except through common trusts. The latter are analyzed once a month, he states, and the former only once or twice a year (p. 524).

The sections of the book dealing with security selection appear to this reviewer the least satisfactory on two scores. The author's over-simplification of financial analysis leads to unfortunate statements ("the accountant is interested in knowing the exact account value," p. 245) and the adoption of inconsistent methodology since he adopts book values as a major factor in

security prices and then uses the prior-deductions method of calculating coverage of preferred stock dividend requirements, but an over-all method for computing book values. Incidentally, equipment trust certificates are not interest-bearing, nor secured by rolling stock, as the author states (p. 159). A second drawback appears to exist in the complicated method of security selection, starting with an idea for purchases derived from businessmen, brokers, bankers and others, the collection of data from financial sources, supplemented with calculation of ratios and interviews with company officials(!) The reviewer believes that such procedure would tend to scare potential investors, rather than encourage them—especially the small investor for whom the book was written.

The inclusion of materials on how to read the financial page and an appraisal of rating services are interesting and valuable additions. Yet, the reader might wish that Professor Kamm, who writes so well and has an authoritative background, had attempted a somewhat more sophisticated level for his initial text in this field.

Francis J. Calkins

Marquette University

Personal Finance. By John A. Leavitt and Carl O. Hanson. (New York: McGraw-Hill. 1950. Pp. ix, 374. $3.50.)

This newest text for the increasingly popular course in Personal Finance is written in a more attractive style but contains less meat than others. The twenty chapters cover the usual range of topics presented in such a course, with a chapter on business law added at the end. The authors have aimed at brevity and quite properly disclaim any attempt to present an exhaustive treatment of these topics. Unfortunately, however, the discussion of certain subjects is not only brief but superficial. For example, all types of securities—government bonds as well as corporate bonds and stock—are treated in a total of fifteen pages.

The authors have been quite forthright in expressing their own opinions and offering the reader practical advice with regard to each of the topics covered, and in the judgment of the reviewer nearly all the advice given is quite sound. The questions which follow each chapter are of the "thought" type and should provide a good basis for interesting class discussions. There are no references, bibliographies, or suggested readings.

The book as a whole suffers from a lack of organization, showing little logic in the sequence of chapters. For example, charge accounts and installment buying are discussed in Chapter 2, but the treatment of consumer borrowing is postponed to Chapter 9, where it intervenes between a chapter on savings institutions and another on savings instruments. The formula for computing the interest rate is presented in connection with installment loans in Chapter 9 but is not used in the earlier chapter on installment sales.

The book suffers also from some unfortunate misstatements of fact, such as the definitions of "restricted" and qualified endorsements on page 95, and the statement on page 230 that an annuity contract contains some element of

insurance and differs in only minor respects from an endowment policy. On page 261 the reader is given the impression that it is always cheaper to own than to rent a home and that it is not necessary to include any allowance for depreciation in the cost of owning a home. The book was written before the recent revision of the Social Security Act, but the illustration used on page 242 shows a misunderstanding of the method of computing the "average monthly wage" under the old law. There is no mention of state payroll taxes for unemployment insurance or of the 90 per cent credit provision of the federal tax.

The chapter on budgeting presents a very realistic and practical view of the subject, but is defective in its failure to maintain a clear distinction between the budgeting and record-keeping aspects of personal finance. The authors take a courageous position on endowment insurance and other policies with investment features, but do not present enough material to convince the reader of the soundness of their conclusion or to enable him to defend it against the first insurance salesman he encounters.

In short, the book contains useful information and ideas and good practical advice for the general reader who has not been educated in financial matters, but in the reviewer's judgment does not contain enough material for a college level course.

E. S. Wallace

Millsaps College

Public Finance

Fiscal Policies and the American Economy. Edited by Kenyon E. Poole. (New York: Prentice-Hall. 1951. Pp. x, 468. $4.75.)

This volume, which analyzes the theoretical, monetary, and institutional aspects of fiscal policy in a series of nine essays, each written for it by a different contributor, is a useful addition to the extensive literature in this field. Although the technical competence displayed in the essays is high, the book contains only one new contribution, the chapter on the redistribution of income through the fiscal system. Its main value lies in its examination of fiscal instruments in relation to the institutional framework of the American economy, a direction of emphasis which some readers may regard as constituting an additional contribution.

The subjects covered by the chapters are extensive, ranging from a broad history of federal public finance policies to the international aspects of fiscal policy. They include the significance of public debt to the economy as a whole and financial institutions, the effects of fiscal policy on employment and the price level, the significance of government expenditures, and a review of the tax system. Although the use of economic analysis, as compared to description and factual detail, varies considerably among the chapters, it is, in general, neither neglected as a tool nor applied as a *tour de force.* The various chapters supplement each other very well with a minimum of duplication, and cross references to various topics discussed in the chapters have been fre-

quently inserted. In addition, annotated references for additional reading are listed at the end of each chapter.

Nevertheless, as judged by the extent to which it fulfills its purpose, the book has limitations, some of which are important in the opinion of the reviewer. According to the editor's preface, the purpose of the volume is to help the reader explore the ramifications of fiscal policy in its theoretical, monetary, and institutional aspects. Evaluating the product in terms of its purpose, these limitations stand forth:

1. The basic theoretical issues involved in fiscal policy analysis are not adequately presented. In their simplest form these involve an appreciation of the static equilibrium relations between the commodity markets, the money and capital markets, and the labor markets and the consequences of various fiscal measures for these relations. Adequate discussion of these points would have aided the nonspecialist reader in understanding the ramifications of fiscal policy theory and comprehending the significance of empirical information and institutional practices for fiscal policy.

2. Although many comments are scattered through the book on the results of fiscal policy formation, the policy-forming process itself is inadequately developed, especially for government expenditures and taxes. Some attention to the institutions through which fiscal policy is formed would seem to be justified in a symposium of this type.

3. There is little technical discussion of federal excises, payroll, estate, and gift taxes, and very little discussion of alternative types of federal taxes, such as a general sales tax. The first three are important sources of revenue, and all are very closely related to the central issues of fiscal policy.

4. The relative merits of areas in which public investment might be fruitfully undertaken are almost neglected. This field is evidently important for fiscal policy.

The first limitation seems to this reviewer to be of dominant importance. While these criticisms apply, directly or indirectly, to several essays in the collection, they are not intended as comments on the chapters to which they refer, but rather as comments on the book as a whole.

Considering the merits and limitations of the volume, as outlined previously, its chief appeal will be to the nonspecialist, although specialists will find a few rewarding chapters. Lay readers will find it hard going in many places. It is a very good book for use as reading in fiscal policy in graduate as well as undergraduate courses in economics.

The first three chapters are intended to be read first and in sequence; the remaining chapters may be taken up in any order. The first, "Background and Scope of American Fiscal Policies" (Kenyon E. Poole) is an interesting and nontechnical survey of the extent to which federal financial activities can be utilized for economic stabilization. Its main conclusions, that the increasing rôle of government both increases rigidities which enhance the difficulties of applying fiscal policy for stabilization and lessens the need for such policy, are not clearly developed from the discussion, a large part of which is historical.

Roland I. Robinson's contribution, "Monetary Aspects of Fiscal Policy," is a well-done analysis of the (1) relations between monetary and fiscal policy,

(2) areas of agreement and conflict between monetary and fiscal policy, with emphasis on conflict, and (3) effectiveness of monetary policy as an instrument of stabilization. However, the main issues of analysis are only partially developed in the sections devoted to the force of monetary policy, and some of the conclusions are shrouded in uncertainty. For example, the reasons why credit restraint only becomes effective at the risk of becoming too effective, thus precipitating a decline in business activity, are not clear (pp. 80-82). There is no discussion of the fact that credit restraint limits the *eventual* inflationary price rise, even if investment and savings are interest inelastic, unless there are no limits to the velocity of circulation of money. Nevertheless, this provocative essay is one of the best in the book.

Henry M. Oliver's essay, "Fiscal Policy, Employment, and the Price Level," is a good summary of the economic effects likely to follow from the use of fiscal instruments in economic stabilization, taking account of certain rigidities and behavior patterns which seem to be characteristic of the modern American economy. However, many important theoretical issues either are not presented or are hidden in the argument, and the chapter falls somewhat short of being an adequate discussion of the theory of fiscal policy, which is its function, according to the preface. For example, there are few clues as to why price flexibility would prevent unemployment (pp. 149-50). Liquidity preference is only referred to in a footnote (p. 114). The "Pigou effect" is not mentioned.

The chapters entitled "Debt Management" (Henry C. Murphy) and "Financial Institutions as a Factor in Fiscal Policy" (Harry G. Guthmann), both devoted to problems of the public debt, supplement the earlier essay on monetary aspects of fiscal policy. Henry C. Murphy's essay is a good presentation of the meaning of debt management, certain factual data concerning the public debt, and postwar as well as future debt problems, but one of his conclusions is not true without extensive qualification. The statement that substantial reduction in the public debt would unduly depress the economy, because it requires that private capital formation exceed private savings by the amount of annually retired debt, thus imposing an *additional* burden on investment outlets (p. 199), is only true when the taxes imposed for debt retirement reduce *consumption*. If such taxes largely reduce *savings*, taxes expand at their expense, and the investment required to sustain full employment is no greater than in the absence of the higher taxes for debt retirement. In addition, there are other considerations which influence the result.

In addition to presenting a good analysis of the liquidity needs of the major financial institutions in the money and capital markets with special emphasis on public debt, Harry G. Guthmann's contribution shows the relation of monetary policy and debt management to the practices of these institutions and economic events in general.

"Government Expenditures and Their Significance for the Economy" (John F. Due) contains a refreshing fusion of factual data on federal, state, and local expenditures, their economic significance, optimum expenditure levels and patterns according to principles of welfare economics, and an evaluation of the extent to which actual expenditures are determined in accordance with these principles. Although the reader may criticise certain parts of the essay,

such as the author's conclusions as to the most satisfactory measure of the importance of the governmental sector (p. 223), it is in general a very good discussion.

There is more in the chapter "Repercussions of the Tax System on Business" (E. Gordon Keith) than is suggested by its title, for the term "repercussions" has been broadly interpreted to cover a variety of ways through which business is affected by taxation. On the other hand, the essay is largely concerned with the federal taxes on individual and corporate incomes; it avoids detailed examination of other federal taxes on the grounds that they are less important revenue sources and do not affect business decisions so directly.

In this well-written essay the author covers the objectives of tax policy, the effects of current federal taxes on business practices, price and wage policies, and investment, and some proposals for reform. Considering the paucity of evidence as to the effects of taxes, his conclusions that the corporate and personal income taxes taken together discourage equity financing, weaken investment incentives somewhat, and reduce the supply of risk money seem sound. However, he does not extend his analysis to venture an opinion as to the important question of the over-all change in investment which would occur if those taxes which hit savings were replaced by taxes on consumption. From the discussion it is not at all certain that there would be a significant change. Within its scope, the essay is a valuable one.

"The Fiscal System, the Distribution of Income, and Public Welfare" (John H. Adler with an appendix by Eugene R. Schlesinger) combines, for federal, state, and local levels of government, prior methods of estimating the immediate burden of taxation by income classes with similar methods, applied for the first time, of estimating the immediate benefits of government expenditures and presents esimates of the redistribution of income from the fiscal system for 1938-39 and 1946-47. According to these estimates, if account is taken of the change in the distribution of income and certain statistical adjustments, the pattern of the redistribution of income in 1946-47 was very similar to that of the earlier period. In addition to outlining briefly the statistical techniques used, the paper discusses the conceptual problems and from its findings draws conclusions, some of which are very dubious, as to their significance for fiscal policy. A large number of problems, starting with the significance of the concept of immediate benefit and burden (incidence), are raised by this essay, which examines a very difficult problem with speculative techniques. Nevertheless, it contains many illuminating insights and worthwhile observations.

The concluding chapter, "International Aspects of Fiscal Policy" (Frank W. Fetter), is largely a history of the relations between American fiscal policy and international economic relations with liberal doses of monetary history and a statement of possible future implications of American fiscal policy and international economic policies.

Both the editor and collaborators should be congratulated for producing an interesting, readable, and very worthwhile book.

CHALLIS A. HALL, JR.

Yale University

Report on Japanese Taxation by the Shoup Mission. 4 vols. By CARL S. SHOUP *et al.* (Tokyo: GHQ, SCAP. 1949. Pp. iv, 400.)

Second Report on Japanese Taxation by the Shoup Mission. By CARL S. SHOUP *et al.* (Tokyo: Japan Tax Association. 1950. Pp. 92. ¥250.)

When the Shoup Taxation Mission went to Japan in 1949, the Occupation and the Japanese government had just wounded Goliath mortally with a slingshot, and wrecked the slingshot. They had checked a rampant inflation with a patchwork tax system, compounded of Japanese and American practices with liberal additions of chewing gum and baling wire. But the effort and strain had disclosed for all to see the weaknesses of this patchwork system. To raise the aggregate amounts required to check inflation, a bewildering multitude of direct and indirect taxes were in force. At the center of the national tax system were self-assessed taxes, chiefly on incomes. But on these taxes arbitrary mass reassessments were carried out periodically at wholesale, as each local tax office strove to meet or exceed its quota of collections. Honest and dishonest suffered alike, and taxes were collected in the presence of armed Occupation troops, almost literally at gun-point. Widespread evasion was met with widespread extortion, and accompanied by widespread corruption of the underpaid tax personnel. The tax collector had replaced the policeman as the nation's bogey; "bad taxes" were a main economic talking point of the Japanese Communist Party. Capital accumulation, either individual or corporate, required tax evasion almost as a *sine qua non.* The Occupation had imposed upon prefectural and local governments the bulk of the cost of educational, health, and social welfare services on a scale previously unknown in Japan. Completely incapable of financing these activities, the localities were dependent on hand-outs from the capital and on "voluntary" contributions of a completely unbudgeted and extra-legal nature.

The people's hatred for the previous system provided the Shoup Mission with an opportunity rarely accorded a team of technical specialists—a respectful populace willing, even eager, to listen to what they had to say. The Mission's aloofness and isolation was also in its favor, since both SCAP and the Japanese government were hamstrung by internal wrangling between economic pressure groups. Also beneficial was the certainty that their program would go into force virtually unchanged, despite the trappings of Japanese democracy, after General MacArthur gave it his official blessing in September 1949. But along with the opportunity went the difficulty of prescribing institutional change in an unfamiliar institutional setting. Dr. Shoup and his party spent only three months in Japan on their first visit (1949), and only six weeks on their second (1950). Neither Shoup himself nor the bulk of his staff had previous experience in the Orient. Rarely has the attempt been made to build so much of Rome in so little more than a day.

The Shoup Mission suggested, and the Japanese Diet enacted, an almost complete overhauling of the Japanese tax system. The changes advocated, and the reasons for their advocacy, make up the text of both the Shoup *Reports.* The earlier *Report* contains in its first two volumes an excellent small-scale treatise on fiscal theory pure and applied. The remainder of the first report, and the great bulk of the second, is concerned with administra-

tive matters of minor interest outside Japan. The text is in both English and Japanese, on opposite pages. This reviewer knows of no better text for students seeking a working vocabulary in financial Japanese.

The principal changes advocated by the Shoup Mission can be summarized under five main heads.

1. Top-bracket income tax rates were reduced from 85 to 55 per cent to encourage private capital formation. A tax on net worth (assets) of the wealthiest Japanese was adopted at the same time, to prevent tax avoidance by holding capital idle.

2. Corporate income and excess-profits taxes had been devouring funds which should have gone for capital replacement; depreciation allowances were based on prewar prices and completely inadequate to accomplish their purpose. The Shoup system repealed the excess-profits tax and allowed for the revaluation of assets on the basis of 1950 prices. Over-revaluation was checked by a "revaluation gain tax."

3. Local governments were given a greater degree of fiscal autonomy by increasing the revenue sources available to them. One of these was a broader property tax, including for the first time industrial machinery along with real estate. Another was a sales tax, based on "value-added." In addition, standards were set up for the distribution of Central Government aids. This reform was designed to reduce the arbitrary element in inter-governmental fiscal relations.

4. A number of regressive and burdensome commodity excises were repealed, the most important being a 40 per cent levy on all textile consumption, and a transactions tax which pyramided badly and handicapped small firms competing with larger ones.

5. A revised system of tax administration was outlined, with special reference to income taxes. Taxpayers keeping books in standard form were to be exempt from mass reassessments. The "quota system" of collections was abolished. Trained investigators were to audit taxpayers' records. More severe penalties were to be inflicted on tax dodgers. "Collective bargaining" with taxpayers was to be abolished. The number and remuneration of tax personnel was to be increased, and higher standards enforced as regards both competence and honesty.

Nevertheless, perhaps because their advance hopes had been raised too high, many Japanese were disappointed by this report and by the 1950 legislation. The "Shoup tax system" did not reduce over-all taxes to anything like the extent expected. Much of the reduction was at the expense of higher food prices, since food subsidy payments were cut as well. On this basic point, however, the Mission was hemmed in. It was hemmed in by requirements for a super-balanced budget, for support of the Occupation on a standard midway between America and Hollywood, and for maintenance of the educational, police, health, and welfare services on an Occidental scale. The Shoup system was also probably slightly less progressive on balance than its predecessor, when coupled with the lowered subsidies on food. Private capital formation is difficult to secure by tax favors, when it is inhibited mainly by fears of Communism, fears of war, and fears of foreign barriers against

Japan's exports. The lessening of administrative rigor and unfairness had, at least temporarily, an unfortunate result on income tax collections; the proportion of the total paid by the workers in payroll deductions rose sharply, and the income tax seemed on the point of degenerating to a payroll tax. At the same time, Japanese public opinion seemed wedded to its traditional views of direct taxation and local autonomy. The first was a form of tyranny, and the second a throw-back to the feudalism of the Shogunate.

It will be interesting to see what the Japanese government will do to the Shoup reforms after the Peace Treaty restores it full freedom of action in the domestic economy. Grapevine rumor from Tokyo is pessimistic as this is written (Fall 1951). Plans seem under way to eliminate the net worth tax, and to reduce the local governments to their historical position of financial dependence on Tokyo. There may well continue the whittling away of the income tax to a payroll tax with an income-tax façade. On the other hand, departure of the Occupation may lead to substantial reductions in expenditures despite partial rearmament. From these reductions, the lower classes may obtain the major tax benefits. (Indeed they should, on "benefit" grounds, for these expenditures were mainly designed to assist them.) The course of post-Occupation Japanese taxation, and indeed Japanese finance in general, should prove a fascinating study for economists and historians of both America and Japan.

M. Bronfenbrenner

University of Wisconsin

The Corporation Income Tax. By Richard Goode. (New York: John Wiley and Sons. London: Chapman & Hall, Ltd. 1951. Pp. xiii, 242. $3.00.)

Although enacted several years before the modern personal-income tax, the corporate-income tax remained for three decades essentially ancillary to it. But in the middle 'thirties, it began to take on fiscal importance that became reflected in the economic literature. During the last decade interest has heightened considerably. Besides monographs on various aspects of the tax by Butters, Lintner, Lent, Gillim, Groves, Vickrey, Kimmel, and others, we have had a growing periodical literature, and important studies and reports by government agencies and private research groups. The present work[1] by Richard Goode brings to a culmination these earlier works; it represents the definitive general treatment of the corporation-income tax.

Goode breaks his study up into three major parts. In the first section (Chaps. 2 and 3) he considers the suitability of the corporation as a basis for taxation. This discussion leads through the labyrinth of theories of benefit, allocation of social cost, social control, ability to pay, etc. He finds (p. 43) that such criteria provide, "somewhat inconclusively," a basis for the taxation of corporations.

[1] This recent monograph should not be confused with his earlier study—*The Postwar Corporation Tax Structure*—made in 1946 for the U. S. Treasury Department, Division of Tax Research (now Tax Advisory Staff). This early study was primarily concerned with techniques of eliminating the "double taxation" of dividends.

This type of discussion is standard fare in the corporate-tax field. If it must be done, my man to do it would be Goode. But it seems to me that all this leads up a blind alley. For, suppose that one of these criteria provided a basis for corporate taxation. What then? Does it follow that we would rush in with a tax on corporate income? Only if it resulted in a smaller decrease in welfare or in a better distribution of income than its alternatives should its enactment be urged. Thus, nothing is really settled here by ability-to-pay or benefit theories.[2]

The meat of the book is found in its second part (Chaps. 4 through 8) which deals with the effects of the tax on prices, incomes, and the distribution of income and wealth. This section is ushered in by a chapter on the "incidence" of the corporate-income tax. It contains the standard analysis of the short-run incidence of the tax[3] and the novel view, in modified form, put forth by Goode in 1945 on long-run incidence.[4]

Goode concludes that the short-run incidence of the tax is on profits, except in the case of monopolists and quasi-monopolists who were not previously exploiting their markets. In the long run, he finds that the tax will not increase the *general* level of prices unless it increases effective demand—an unlikely possibility. But "whatever its effect on the general level of commodity prices, the corporate tax in the long run will probably increase the relative prices of commodities in whose production the corporation form is especially advantageous"[5] (p. 72).

In the balance of this section Goode works out the effects of the corporate tax on the distribution of wealth and on national income. Throughout, he attempts to give quantitative answers to these key problems. He finds the tax to be progressive (Chap. 5), to have less adverse effect on consumption than alternative taxes (Chap. 6), to have more adverse effect on investment—and here he recognizes that no precise figure can be confidently placed on the amount (Chap. 7), and, on balance, to have less adverse effect on national income than its alternatives (Chap. 8).

Goode's approach in this section has many virtues. He weaves together the effects of the tax on prices with its effects on aggregate demand for goods and services. He compares the effects of this tax with that of others—an important and difficult job which Goode has done carefully.

I have certain qualms about the results in this section, nevertheless. Goode

[2] Notice that such theories have also been used as justifications of value-added taxes and even franchise taxes on corporations and other business enterprises.

[3] Many authors could be cited to support this statement. For a recent example, see J. Fred Weston, "Incidence and Effects of the Corporate Income Tax," *National Tax Journal*, December, 1949.

[4] "The Corporate Income Tax and the Price Level," *American Economic Review*, March, 1945.

[5] Goode's distinction in his long-run analysis between the effects of the tax on the *general* price level and on *relative* prices is a welcome one. In his earlier study he had blurred this distinction through his heavy emphasis on the effects of the tax on aggregate demand, and his position was somewhat unclear. Bowen's criticism ("The Incidence of the Corporation Income Tax: A Reply," *American Economic Review*, March, 1946) seems now largely accepted by Goode.

follows out only one assumption—the extreme one—derived from the short-run analysis that the whole tax falls on profits. This causes him some uneasiness;[6] but he sees no clear indication that other assumptions would be more useful or more accurate.

The trouble is that short-run analysis turns on the alleged fact that the corporate tax does not affect marginal costs. Plant, it is argued, is fixed in the short run, hence no interest return for it is included in marginal costs. But, what of the return for *variable* or working capital that does vary with short-run output changes? In principle, the same implications with regard to tax incidence should be drawn from short-run working-capital changes as Goode draws from long-run changes in total capital.

Moreover, even with this qualification, it is doubtful that conclusions based on short-run analysis are the proper ones for Goode's purposes. True enough, tax legislation to cut back effective demand within a given year should be based primarily on the more immediate effects of the tax. It is cold comfort, indeed, to know that investment will drop back sometime or other in the future. Nevertheless, continuance of the tax, despite its initial rationale, would necessitate an examination of its long-run effects. Forces that produce the long-run effects take hold quickly and are pushing their way past the initial short-run situation. Thus, effects on the distribution of income, for example, soon become long-run rather than short-run ones. Moreover, a step up in the tax means that, perhaps, a large portion of it has been in operation for some time. The tax slate is never wiped completely clean; we cannot proceed as if there were no taxes on the books at the beginning of a period.

If our criticism is sound, it might have been preferable for Goode to have shown a range of the possible tax effects, or several alternatives. Slight changes in assumptions can make significant changes in the distribution of the corporate-tax burden, as Musgrave has shown.[7]

The last section of the book is somewhat more technical. It deals with the economic effects of different methods of defining taxable income—*e.g.*, inventory valuation, depreciation, interest and rent (Chap. 9)—and of different methods of eliminating "double taxation" of corporate profits (Chap. 10). These chapters are able treatments in short compass of difficult subjects.

Goode's summary chapter (11) appraises the corporate tax by developing his tax criteria and weighing the tax against them. He finds that the corporation tax is our second-best tax, second only to the personal-income tax. I especially commend to the reader the explicit way in which he handles his value judgments. He faces directly the problem of whether the tax system should encourage more consumption and less investment, or vice versa. Regardless of whether or not you agree with the position he takes, you cannot but applaud his effort to bring all of his assumptions out into the open.

This book will rightly become the standard work on the economic effects

[6] "The critical reader will recognize that this assumption is not definitely supported by the findings of the preceding chapter and that indeed it is to some extent inconsistent with them" (p. 75).

[7] See R. A. Musgrave, J. J. Carroll, L. D. Cook, and L. France, "Distribution of Tax Payments by Income Groups: A Case Study for 1948," *National Tax Journal*, March, 1951.

of the corporate-income tax. It will prove indispensable in fiscal-policy courses that want to give the student a model of tax analysis, not solely one for the corporate tax. Goode's breadth, judiciousness, and craftmanship make this an impressive study.

E. CARY BROWN

Massachusetts Institute of Technology

International Economics

World Trade and Investment. By DONALD BAILEY MARSH. (New York: Harcourt, Brace and Company. 1951. Pp. xxii, 594. $6.75; text ed., $5.50.)

World Trade and Investment represents a remarkable combination of intensive theoretical reasoning and a realistic presentation of current institutional patterns of economic activity. Professor Marsh has written more than a textbook which merely brings together the material that a student is expected to know about a particular field. He has provided at many points a new synthesis of the latest developments in national economics with those in international economics, to the considerable benefit of both. For example, he has related national income accounting to balance-of-payments accounting and has shown how the two systems may be reconciled. In his presentation of the foreign trade multiplier, he combines the more advanced closed-system multiplier analysis with an analysis of changes in the foreign balance. Again, the theory of international values is developed through the application of Hicks's indifference curve apparatus. While the author employs theoretical reasoning in his excellent discussion of current policy problems, the reviewer cannot help feeling that most of the beautifully designed tools which the economic doctor carries in his kit when he goes out of the classroom to diagnose and prescribe for the world's economic ills are never used.

World Trade and Investment is divided into three books which, as the author suggests, might be used independently in teaching. Book I is a survey of international trade and capital movements, largely descriptive in character. Book II is concerned with income and balance-of-payments accounting, a description of the foreign exchange market and the theory of its operation, the foreign trade multiplier, and the theory of international values. There is a discussion of both the price and the income effects of exchange depreciation, but in the opinion of the reviewer the section on demand and supply elasticities is deficient both in clarity and in the development of the full implications of exchange rate changes. Moreover, this is a case in which the author could have employed his theoretical techniques to greater advantage in analyzing the exchange rate problems of the postwar period which he takes up in Book III.

Professor Marsh divides his discussion of the theory of international values into two parts: (1) a two-country, two-commodity analysis in terms of the indifference curve technique, and (2) the theory of general equilibrium. Dr. Marsh does a good job in showing the relationship between the partial equilibrium and the general equilibrium approaches and in analyzing the problem of

real costs versus general equilibrium. This theoretical treatment would have been more useful and meaningful to the student, however, if the author had devoted more attention to the relationship between his theory of international values and the actual money prices and exchanges rates in the market. The final chapter of Book II deals with the impact of monopoly and monopolistic competition on international trade. In this chapter the author also discusses the use of the tariff as a means of securing the optimum terms of trade.

In Book III, Dr. Marsh takes up certain major international economic policy issues, including the problem of dollar shortage. The author's approach is largely in terms of the operations of institutions designed to deal with these problems. The descriptions of the European Recovery Program and of the International Monetary Fund are excellent. Rather than the usual superficial description of these organizations, he presents a penetrating and realistic analysis of their functions. A systematic discussion of exchange control devices, particularly of multiple exchange rate systems, is lacking, however. The discussion of comercial policy is confined to a rather pedestrian outline of the ITO Charter, which now seems to have little more than historical significance. While the unhappy fate of the ITO Charter could not have been known to the author at the time of writing, it is to be regretted that more attention was not paid to the operations of the General Agreement on Tariffs and Trade. There is little discussion of the tariff issue or of the wide variety of commercial policies and practices. The last four chapters are concerned with international investment and provide a good account of the scale and pattern of direct investment together with an analysis of the operations of the Export-Import Bank and of the International Bank for Reconstruction and Development. While the conditions for successful international investment are set forth, the book lacks a discussion of the theory of economic development in its broadest aspects.

The contributions of this book far outshadow its deficiences as a text. Moreover, these deficiencies can readily be overcome by supplementary material, particularly in the field of commercial and foreign exchange practice and policy. While the author suggests that this book is suitable for a one-semester undergraduate course, the reviewer would regard this as an exceedingly difficult pedagogical feat, unless the instructor were dealing with a group of students already well grounded in the theoretical techniques which Professor Marsh develops in Book II.

RAYMOND F. MIKESELL

University of Virginia

The Customs Union Issue. By JACOB VINER. (New York: Carnegie Endowment for International Peace: London: Stevens & Sons Ltd. 1950. Pp. viii, 221. $2.50.)

"It is a strange phenomenon which unites free-traders and protectionists in the field of commercial policy, and its strangeness suggests that there is something peculiar in the apparent economics of customs unions. The customs union problem is entangled in the whole free-trade-protection issue, and

it has never yet been properly disentangled" (p. 41). The heart of Professor Viner's essay is the most cogent analysis of the economics of customs unions to be found in the literature. But this means perhaps only that the book was written by Jacob Viner.

Viner resolves the paradox by showing that actual situations may differ so much that customs unions may have either protective or free trade results. Suppose, he points out, the customs union leads to a re-direction of trade of the one partner from the cheaper outside world to the more expensive neighbor? This is a result which a free trader hardly can approve. Or suppose that the combined tariff of the new customs union is the highest of any of the partners? This too is hardly in the direction of freer trade. But it explains why protectionists may find customs unions attractive.

In this respect customs unions may be simply discrimination against the outside world carried to its logical conclusion. But these are not necessarily the results. It may, after all, be just as likely that a customs union leads not only to imports from a cheaper source, but also to a re-location of industries in more efficient places. In fact "the larger the economic area of the customs union and therefore the greater the potential scope for internal division of labor," the more likely is a customs union to operate in the free trade direction (p. 51).[1]

But this is the rub. To get the benefits of free trade, a price has to be paid in the form of a different division of labor. It is, of course, possible that the growth of foreign trade is so great that the change in the division of labor affects only as yet nonexistent firms, but leaves old firms unaffected. If not, the existing firms will resist the union, either directly or indirectly. Viner discusses this point among others in a section on "Cartels and Customs Unions" (pp. 75-78).

The recent discussions of the so-called Schuman plan make his point abundantly clear: the difficulties over the high-cost Belgian coal mines and the objections voiced by both German and French steel producers based on their (mutually exclusive) fears that each may be undersold by the other, and worse, that the realization of the Schuman plan would lead to a re-location of the steel industries in each other's territories all indicate that the respect paid to customs unions and related arrangements is mostly lip service or has political foundations.

Because "economic planning has made trade barriers protective of more than allocation of resources and has thus made their removal a much more delicate and economically debatable matter" (p. 138), Viner sees in customs unions neither "a practicable nor suitable remedy for today's economic ills" but rather "a psychological barrier to the realization of the more desirable but less desired objectives . . . the balanced multilateral reduction of trade barriers on a nondiscriminatory basis" (p. 139). In this everyone will agree with him. When everything is said it seems very much easier just to reduce trade barriers than to create customs unions which—as long as there is unwillingness to let trade be really freed—bring with them a host of new and worse

[1] Professor Viner conveniently summarizes his findings in seven points on pp. 51, 52 of which the quoted point is the first.

problems. Furthermore, it is really no more difficult to include more than to include fewer countries in a freer trade grouping, though this is not necessarily so for a customs union.

The Benelux agreements have to this day not become a living reality in spite of the fact that the political preconditions have been exceptionally favorable. And Professor Viner's analysis, together with the balance-of-payments difficulties of the Dutch pointed out by Professor Meade,[2] gives no cause for optimism in the future.

I find it impossible to accept one minor statement by Viner on the political aspects of customs unions, but even this criticism only serves to strengthen what Professor Viner has to say. "Customs unions have not been formed at random. . . . Small countries, when they have any real freedom of choice . . . stay out of customs unions with powerful neighbors unless there are present special circumstances. . . . The case of Austria in 1931 would appear to be the only modern case where any country valuing its independence has nevertheless shown readiness to risk that independence for economic reasons, but Austria was acting from economic despair" (pp. 104-105).

The point is, of course, that Austria did *not* value her independence. In fact, German Austria had tried to join Germany in 1918-1919 and the *Anschluss* was, in the days before Hitler, popular not among the nationalists on either side of the border, but among social democrats. Some laws were already identical in Austria and Germany, and others like the criminal code were about to be unified when Hitler came to power. Austria was indeed economically desperate, but the case is not an exception to Professor Viner's rule.

There seems to be no easy way out of the dilemma that the economic benefits of customs unions can be had only at a price, and that this price not only includes shifting of industries and sources of supply, but also giving up of political prerogatives of planning. It is quite possible that the threat of Soviet domination of Western Europe may make the Europeans willing to pay the price, but even here the impetus for any unification will have to be political.

WOLFGANG F. STOLPER

University of Michigan

[2] J. E. Meade, "The Removal of Trade Barriers: The Regional versus the Universal Approach," *Economica*, May 1951, pp. 184-198. Professor Viner also discusses balance of payments difficulties, but not as extensively as might perhaps be wished. However, Professor Meade's point is that fluctuating exchanges, and possibly only they, would make freer trade possible.

Policy for the West. By BARBARA WARD. (New York: W. W. Norton. 1951. Pp. viii, 317. $3.75.)

Miss Barbara Ward, until recently the distinguished foreign editor of the London *Economist*, has written a tract for the conduct by the West of cold war with Soviet Russia. It is by no means a tract for professional economists; nor is it mainly an economics tract. Miss Ward argues eloquently that the West frets too much over economics—over inflation, standards of living, and

what we can afford—while our enemy, hypocritically but effectively, poses as the champion of peace and idealism. The qualities we need most to supplement "containment" are faith, hope, and poetry.

The non-economic parts of the tract are first-rate journalism—lively, well-informed, stimulating and usually persuasive. Her thinking on political strategy is based on her conviction that the Politbureau will ruthlessly exploit any positions of weakness if it thinks it can do so with impunity. But history tells us that Russia does not start major wars; it does not risk its own destruction. "The policy of containment may make formidable calls upon Western resources and Western patience, but insofar as it is given to us to see the future, it offers a chance and a hope of peace."

Miss Ward summarizes the "material" part of her program on page 189: (1) build an effective system of joint defense (the problems here are not discussed at length, but boldness is urged: "In fixing our defense budget it would be folly to err on the modest side"); (2) maintain economic "stability and expansion" in the United States and Europe; (3) initiate a systematic and much more ambitious effort to raise the standards of backward peoples, especially in Asia.

To help achieve these objectives, including surprisingly the third, she advocates a strengthening of the Atlantic Pact machinery, with a full-fledged Combined Chiefs of Staff, a Joint Production and Resources Board, and an Economic Development Board. These are all examples of the practical, partial, functional approach to federalism which Miss Ward prefers, but she gives the impression of slurring over difficulties. Her constant references to the wartime Combined Chiefs of Staff and Combined Boards are misleading: these were two-power boards, and the differences between two-power and multi-power boards are differences in kind. Nor does she consider how sensitive Asiatics will react if responsibility for their development is placed under an Atlantic Council of "imperialist" (or ex-imperialist) powers.

The economics content of the book is largely confined to certain chapters in Parts II and III ("Strength" and "Unity"). They are in many respects her weakest and least satisfactory chapters. Miss Ward's brand of economics is considerably less rigorous than that of *The Economist,* and several degrees closer to the *dirigisme* of Mr. Balogh.

She is very concerned to prove (obviously to the American reader) that a certain amount of national and international economic planning by governments is now essential. Much of what she has to say about structural changes in the world economy since the 19th century, "when self-regulating economic forces worked," is relevant and important, although all will not draw the same moral for policy. Unfortunately, she spoils her effect for professional economists by a sophomoric attack on the law of comparative advantage. She does not demarcate clearly the areas within which she considers government planning to be necessary. She is most concerned with "Keynsian" problems of matching aggregate demands and supplies in a stable fashion over time, but she also wants to insure "reasonable balance" in the international accounts of each nation and area, and there is a good deal of evidence that she looks with favor upon the planning of specific industries. The general tone of Chap-

ter 18 and in particular her lyrical and uncritical discussion of the Schuman Plan give the impression that Miss Ward objects to past cartels mainly because they have been too narrowly and nationally conceived.

Miss Ward devotes a conventional chapter to the control of inflation. On the whole, however, she gives the impression of being little worried by inflation: it created havoc after World War II largely because of our ignorance, but we now understand its causes and cures. In the following chapter ("More Wealth") her contempt for the inflationary danger is confirmed. Defense requirements, she thinks, only amount to 15 per cent or at most 20 per cent of the Western Powers' national incomes. If we could increase our productive resources by 20 per cent, we could meet these requirements with no painful diversion from consumption and with little risk of inflation (once we are over the "hump"). And this kind of spurt in output is possible in the United States, Miss Ward argues, as during World War II, even though we are now fully employed. All that is necessary is to finance the defense effort and the aid program "on the same generous scale" and in addition "see that the necessary capital expansion takes place at once." Elsewhere, however, she berates the British Labor Government for having kept the British economy on the brink of inflation since the war by its attempt to achieve everything possible and desirable at once. And here she admits that other countries cannot follow the policy she recommends. There are constraints, it seems, which force a choice between guns, machines, and butter everywhere except in the United States. This is a flattering view of the U. S. economy, but not necessarily a scientific one.

There are other objections to pressing the "hump" theory too far, and no one has stated them better than Miss Ward. In Part I she warned that "we shall certainly fail unless our effort is at once sustained, calm, and supremely positive," for the threat may be with us for decades or generations. In Part IV she reminds us again that "holding the frontiers of freedom may be a permanent feature of our civilization—as the Roman frontier endured through hundreds of years." This kind of sustained effort, she says, is very difficult, very unfamiliar, and very uncongenial to impatient Western democracies. But in between Parts I and IV Miss Ward becomes impatient too. She is prepared to risk inflation for a spurt. She, like the Labor government, wants all desirable things at once. Undoubtedly a certain amount of humping is necessary to get adequate armed forces in being quickly, but the problem is one which needs calm examination by economists and social psychologists. To me the Ward program seems psychologically wrong.

In the longer run, after her hump, Miss Ward believes that our great problem will be the maintenance of economic stability, particularly the internal stability of the United States. Her discussion is a plea for planning and action along Keynes-Hansen lines; it is marred by some political naïveté and a grossly optimistic assumption of our ability to predict the size of prospective deflationary or inflationary gaps. The important international aspect of long-run stability is, to Miss Ward, the closing of the dollar gap. She tries to face squarely the view that it could be closed by an appropriate adjustment of exchange rates. But after some highly questionable argument

against devaluation, it becomes clear that her implicit comparison is with a third alternative: that the United States itself close the gap by grants to backward areas, by military orders placed abroad, or by other measures recommended in the Gray Report.

Miss Ward is concerned with the difference in the climate of economic opinion in Britain and the United States. She thinks that the American view and the British view are both partly right and partly wrong. Americans are right in insisting that efficiency, productivity, and expansion depend upon "the often despised" economic forces: the British are right in insisting upon the concept of stability because, if general stability is not assured, each government will seek locally and ineffectually to achieve stability, thus chopping up the world into a myriad of obstinate, inefficient, and indigestible economies. Is it possible, she asks, to work out policies which contain the element of truth in both—to envisage a world in which certain key positions are maintained by purposive control and governmental action while in the rest of the economy, freedom of movement, action and competition are encouraged and restored? Here at least Miss Ward is asking a good question. One can hope with her that someone will find an affirmative answer.

CHARLES HITCH

The RAND Corporation
Santa Monica, California

Industrial Organization and Markets; Public Regulation of Business

Economic Aspects of Atomic Power. An Exploratory Study under the Direction of SAM H. SCHURR and JACOB MARSCHAK. (Princeton: Princeton University Press, 1950. Pp. xxvi, 289. $6.00.)

The potential usefulness of atomic power has captured the public's imagination just as the potential destructiveness of the atomic bomb has filled us with foreboding. To date, for the most part, economists' thoughts about atomic power have been shaped by the Sunday supplement and a preoccupation with the cost of atomic power and its date of entrance into industry. This book, published for the Cowles Commission for Research in Economics, is by far the most systematic and competent effort made so far to probe the future of industries and regions to gain insight as to the economic propects and probable results of the introduction of atomic power. It is to be hoped that this pioneering effort will set off a chain reaction, and of the breeder type that grows on itself, of further research into the economics of atomic power.

Admitting that the study is exploratory and in no sense definitive, the authors proceed to do a careful, methodical job of analysis. Part One on the "Economic Comparisons of Atomic and Conventional Power" considers the cost and other economic characteristics of atomic power, making use of the few cost estimates now available. For a 75,000 kilowatt nuclear power plant operating at 50 per cent of capacity, the cost at 1946 levels is estimated to range from 4 to 10 mills per kilowatt hour. An intermediate cost of 7 mills might include 5.4 mills for fixed charges on plant and equipment, 1.6 mills

for operating costs, and a negligible amount for fuel. A convenient basis for comparison of atomic and conventional power costs is furnished by an interesting map which shows known or estimated dollar generating costs in numerous parts of the world for power produced from coal, waterpower, oil, gas, and other energy sources.

Part Two, the most helpful part of the study, examines the possible application of atomic power in a number of large or potentially large energy-using industries, including aluminum, chlorine and caustic soda, phosphate fertilizers, cement, brick, flat glass, iron and steel, railroad transportation, and residential heating. In each case answers are attempted to the questions: will the use of atomic power result in cost reductions, what new production techniques are likely to be encouraged, and what changes in industrial location patterns may be expected? For each industry the analysis aims to isolate and compare the energy costs from conventional fuel and from atomic power, using those production processes and locations most favorable to atomic energy, so that the probable competitive cost threshold can be ascertained.

In certain industries, for example aluminum, the production processes would be essentially the same with atomic electricity as with presently used hydro- or gas-produced electric power, but the location of major plant facilities might shift away from cheap energy sources toward either markets or bauxite deposits. In the case of iron and steel, atomic power makes the best cost showing by the use of a different process of iron ore reduction; namely, the sponge iron-low temperature process with electrolytically produced hydrogen as the reducing agent. If expansions in the iron and steel industry should take this technological direction, with steel produced from sponge iron in electric furnaces, significantly new locational patterns for the whole industry may be in the cards. The size of the two major components (blast furnaces and steel furnaces) could be much smaller and they could be widely separated geographically at little cost sacrifice, thereby permitting the exploitation of smaller deposits of ore and the close servicing of smaller markets.

Part Three, called "Atomic Power and Economic Development," contains interesting suggestions as to the possible rôle of atomic power in the industrialization of underdeveloped areas, particularly where atomic power promises to reduce the amount of development capital and foreign exchange required, not alone for electric power facilities, but also for coal mines, railroads, and other ancillary investments. The ubiquitous locational nature of atomic power, arising from its negligible fuel requirements once the initial stock has been procured, should some day prove a great boon to areas such as most of South America where industrial growth is hampered by lack of coal. Part Three also presents an interesting method for estimating the effect of the introduction of cheap atomic power on the national income, and concludes that the major effect is likely to come over the long run through stimulation of innovations and a more rapid accumulation of capital.

The study as a whole provides a fascinating example of how far able economic analysts, making careful use of relevant scientific and engineering as well as economic data, can go toward tentative conclusions, purely on the basis of initial hypotheses as to atomic power cost. The practical relevance of

most of the chapters, of course, will depend on the accuracy and relevance of these hypotheses. Given the very limited information on costs presently available, no other fruitful approach appears possible.

The authors wisely refrain from trying to predict the month and year in which atomic power will be used in this, that, or the other industry or place. They perform the more important service of developing an approach and method for anticipating its economic impact and later effects whenever and wherever it may come into use. To visualize the entrance into the economy of such a dynamic and potentially pervasive force as a new way of producing electric power, and to indicate concretely and quantitatively its major possible effects upon industries, regions, industrial processes, locational patterns, and incomes is a challenge to anyone's mental capacity. Yet this has to be done if we are to have economic guidance in the control and use of atomic power. The Cowles Commission study makes a good start by furnishing a methodology, much background, and many suggestions for industry and area specialists alike who want to pursue the analysis further.

Many major problems of public policy yet to be settled are referred to in the study without being answered. For example, if atomic power is eventually produced jointly with fissionable material, as now seems likely, what principles should govern in the allocation of the large joint costs between the power which would be sold to private users and the fissionable material which would be sold to the government? Should present public power policies calling for low developmental rates and preference to publically and cooperatively owned utilities, which evolved with federal hydroelectric development, be adapted to the marketing of atomic power? What economic and administrative principles should be followed in the licensing, rate making and regulation of atomic power utilities? These and numerous other public policy questions may prove to be as thorny as those of a scientific and engineering nature to which major attention so far has been devoted. The matter has recently become more urgent since a number of private industrial and utility companies, under agreements with the Atomic Energy Commission, have begun experimental work in reactor development looking toward joint production of power and plutonium. Economists, among others, and the Atomic Energy Commission should be encouraged to study these problems which will soon have to be faced.

JOSEPH L. FISHER

Washington, D.C.

Private Corporations and Their Control. By A. B. LEVY. (London: Routledge and Kegan Paul, Ltd. 1950. Volumes I and II. Pp. ix, 916. £3, 10*s.*)

Private Corporations and Their Control is the third publication of The International Library of Sociology and Social Reconstruction whose editor is Karl Mannheim, formerly professor of sociology in the University of Frankfurt-on-Main, and more recently professor of education in London University. Earlier books in the Library's series were Rudolph Schlesinger's *Soviet Legal Theory* and Georges Gurvitch's *The Sociology of Law.* In its own words the Library "deals from a scientific point of view with those problems of economic

and social planning which are of such an urgent nature in the present world situation." It has an impressive Advisory Board including such persons as Sir Harold Butler, Sir Alexander Carr-Saunders, Sir Fred Clarke, and Lord Lindsay of Birker.

In introducing his contribution to the Library, the work under review, Mr. A. B. Levy who was trained in jurisprudence at the University of Budapest and later in England says his book "is concerned with the problems of private corporations and their control" and that it is his aim "to show, by an unprejudiced investigation, that whereas corporations are indispensable if economic progress is to be maintained, a number of legislative reforms are required in order to reinforce public control and to give better protection for shareholders' rights." Mr. Levy does not indicate any particular country as being at the center of his attention. Actually he pays attention to the corporation laws and practices of the United States, Great Britain, and most of the countries of Western Europe. The result is a lack of sharpness of focus, a diffuseness and lack of precision in analysis which will, I believe, leave most American students of "the corporation problem," certainly those of us who approach the problem as economists, disappointed in the results of the author's labors.

What Mr. Levy has really given us is, first, a 223-page history of the evolution of the corporate form of business organization beginning with ancient Egypt and Phoenicia and ending with the consolidated British Act of 1948. Treatment here is by countries with principal attention being given to Great Britain, the United States, France, and Germany, though occasional attention is given to the smaller countries of Western Europe. Following the historical section, there is a 67-page treatment of the part played by the corporate form of organization in the United States and Great Britain and a brief discussion of economic organization in the Soviet Union. Here Mr. Levy makes extensive use of American primary and secondary corporate statistical sources, including our income tax statistics, T.N.E.C. monographs, and the data presented by Berle and Means in the early 1930's. Incidentally, his treatment brings out the surprising skimpiness of reliable and inclusive British corporate statistics as compared to our own. The third and final part of Mr. Levy's two volumes is a 565-page summary of corporation law as he interprets it from his study of a vast number of cases decided by the courts of Great Britain, the United States, and the principal countries of Western Europe. There is here a vast amount of legal information on a wide range of substantive and procedural aspects of corporations. Considerable attention is also given to the administrative regulations of the Securities and Exchange Commission and to certain recommendations of the Cohen Report in Great Britain.

At the end of his second volume, Mr. Levy has a 19-page appendix, the most useful part of which contains information about the processes of nationalization as recently applied in Great Britain. Following the appendix there is a seven-page selected bibliography and a 26-page index.

There can be little question that Mr. Levy has worked with diligence, patience, and genuine seriousness of purpose. Yet somehow his book fails to "come off." Its focus never really becomes sharp. There are too many facts and not enough analysis. The facts just don't seem to march forward to any

objective. Moreover, some of them are simply not accurate. On pages 192 and 193 he says that the Securities and Exchange Commission sets margins in stock trading. Actually this is a responsibility of the Federal Reserve Board of Governors. On the next page he says that the S.E.C. Act "is intended to prohibit short selling in general," a vague, but in so far as it has any meaning, an inaccurate statement. At the bottom of page 246 the total assets of American corporations are given in "millions" of dollars when obviously the figures should have been "billions." Mr. Levy is also sometimes careless in the accuracy of his citations. Thus at different places he assigns two different publication dates to a book written by this reviewer, both of them wrong. In his use of statistical data Mr. Levy is also occasionally careless. Thus on page 237 he confuses statistics of "shareholders" with "shareholdings," though two pages later he, himself, shows how great the relevant differences can be.

The reviewer once heard one Harvard professor describe another Harvard professor's principal work as "a big book, but not a great book." Mr. Levy, too, has written a big book. Undoubtedly students of corporate enterprise will find it a useful book. But it falls far short of being a great book.

PAUL M. O'LEARY

Cornell University

The Navy and the Industrial Mobilization in World War II. By ROBERT H. CONNERY. (Princeton: Princeton University Press. 1951. Pp. xi, 527. $6.00.)

This is the first comprehensive study of the wartime industrial mobilization experience of any of the armed forces to appear since World War II. Though not an official Navy Department history, it was written by a former Naval historical officer and received the blessing of Navy officials. Its appearance is especially timely in view of the current industrial mobilization program; also it goes far toward filling the void represented by the absence of publicly available histories of the major wartime procurement agencies.

The Navy spent approximately $100 billions for its World War II effort. It built scores of shipyards, airfields, arsenals, ammunition and general storage depots, receiving and training stations, hospitals, repair yards, advance bases, and a host of headquarters and miscellaneous activities. It planned and financed the creation or expansion of countless industrial establishments owned and operated by private contractors. On top of all this, it directly or indirectly operated these establishments to turn out battleships, aircraft, submarines, ammunition, clothing, and a torrent of other supplies and services equivalent in size to the entire national output of many a sizeable nation. To achieve its purposes it was involved in a complex network of relationships with the War Production Board, the OPA, the Army, OWMR, and numerous other governmental agencies as well as with thousands of Navy prime contractors and subcontractors. Manifestly, it is impossible within the scope of a single volume to do more than present the major problems and developments in each of the principal categories. Mr. Connery has done this remarkably well and has produced a highly readable volume.

If any adverse criticism of the book is to be made, it is on the score of

looseness of organization, with consequent duplication at various places and significant omissions at others where the author's space and time are at a premium. Thus there is frequent duplicate treatment of the structural aspects of the Navy's coordinating agency for procurement—the Office of Procurement and Material—but no significant discussion of so important a feature of the war production program as the CPFF contract, with its complex substantive and administrative problems. Although there is an excellent discussion of termination loans and incidental reference to the problem of matériel surpluses at the end of the war, there is no systematic treatment of the broad problem of contract termination and settlement, which appeared fairly early in the war, had a substantial bearing on war production, and by the Spring of 1945 became the major preoccupation of all the procurement agencies as well as of the entire business community. Labor aspects of the industrial mobilization are slighted, as well as important developments in contract placement and clearance policy. The 50-page chronology at the end of the book will place many historians and others in Mr. Connery's debt; on the other hand, a dozen pages of statistical tables summarizing in quantitative form the Navy's mobilization experience would likewise have been most welcome. But there are limits to what one man can put in one book under the pressure of time, and the author's accomplishments as well as his specific disclaimer in the foreword should be ample armor against criticism in this area.

Unfortunately, all too few academic economists (either in or out of universities) will read this book. But if they were to read it—and read it thoughtfully—they would find in it much to disturb their perennial preoccupation with delicately refined and studiously irrelevant "tools of analysis," and to direct their efforts to actual analysis of major developments in the real world of economic affairs. For example, when the negotiated contract displaced competitive bidding for governmental procurement at the beginning of World War II, price ceased for the duration to be a market phenomenon for the bulk of the nation's expenditures. A whole new set of price-determining techniques and criteria were developed—ranging from OPA ceiling-price control and the "close-pricing" procedures of the procuring agencies to renegotiation, forward pricing, and termination procedures which used overall "company pricing" and the "excessiveness" of profits as criteria for administered price determination. Now that the negotiated contract has been made a permanent feature of government procurement, and in view of the increasing rôle of government as a spending agency in both peace and war—to say nothing of other permanent changes in the structure of our economy inherited from the war—it would seem to be time for a decided shift in emphasis in the content and methodology of economic price theory. Specifically, important developments in the structure of our economic institutions—such as those described and implied by the book under review—are crying aloud for serious attention by serious economists. So far, the response has been meagre when compared with the energy and zeal devoted to the mathematical refinement of economic acrostics and the theory of games.

R. ELBERTON SMITH

Special Staff, U. S. Army
Washington, D.C.

Public Utilities; Transportation; Communications

Transportation: Principles, Practices, Problems. By CHARLES E. LANDON. (New York: William Sloane Associates. 1951. Pp. xxii, 618. $4.75.)

This text is well designed for the one-semester introductory course in transportation; and with substantial supplementary readings it might be employed for an additional term. The general character of the various agencies of transportation is stressed and their principal problems are analyzed without submerging the student in an endless array of facts. Though the exposition lacks clarity at times, readers should not be able to complain that they cannot see the transportation system for the freight cars.

The author is not primarily interested in transportation as a case study in administrative and regulatory law, but is mainly concerned with the comparative economic features of the various agencies and their competitive advantages and disadvantages. Accordingly, less reliance has been placed on decisions of the Interstate Commerce Commission and while I.C.C. cases are cited throughout the volume, only fifty-seven pages are devoted to regulation *per se.* Instead, abundant use is made of the reports of the Federal Coordinator of Transportation, the National Resources Planning Board, the Board of Investigation and Research created by the Transportation Act of 1940, and the I.C.C. Bureau of Transport Economics and Statistics. Although the present volume makes more use of economic theory than most introductory texts in this field, many economists will continue to desire a more analytical book. It should also be mentioned that the author has concerned himself exclusively with transportation in the United States, and only a few brief references to foreign countries, which are well chosen to illuminate American problems, are included.

The uneven quality of the work is disturbing to this reviewer. The sections on aviation and shipping are frequently quite weak. Statements about overseas operations contain some glaring inaccuracies. This latter shortcoming is not too serious, however, in a volume primarily concerned with domestic transport. More disadvantageous are: the poor choice and presentation of statistics in Chapter 3; and the inclusion of Chapter 19, which adds little to previously presented materials beyond a few debatable pronouncements. For example, "Low rates to meet water competition are justified even though a competing product does not move by water" (p. 346). "It has long been recognized that those who enjoy luxuries are able to, and should, pay higher [transportation] rates" (p. 352). And one wonders at the usefulness of using an estimate of coal consumption made in 1912 in a discussion of current cost factors (p. 354).

A few other criticisms should also be noted. The relation of traffic density to investment in railway roadbeds is not emphasized sufficiently, and the revolution produced by the dieselization of locomotives is inadequately described. The chapter on "The Nature of Transportation Costs" ignores social costs despite the good description some of them received in earlier chapters on terminals and urban transportation. The use of the concept of elasticity of demand and a more sophisticated determination of maximum revenue would materially improve the section on "What the Traffic Will

Bear" (pp. 283-86). Some may feel that atomic energy might at least have been alluded to in the concluding chapters on "The Future of Transportation." It is also curious that recent postwar rate increases granted to the railroads are not mentioned in the chapter on "The General Rate Level." And regardless of one's political convictions, the section on "Government Ownership and Railroad Credit" (pp. 486-87) is so abbreviated that it is woefully incomplete. Finally, the impressive bibliographies, which follow most chapters, would have more appeal for students if they were more selective.

The entire volume is characterized by an ambivalent tone which stems from two causes. One is a basic confusion which seems to pervade the book, while the other is unavoidable. Despite occasional clarifying statements, the author vacillates between advocating a rate of return that is adequate to attract new capital to the industry and emphasizing that the railroads as a whole have excess capacity. To the extent that this premise of overcapacity might be true, it could easily be reconciled with the need for new capital by pointing out explicitly that some sections of the industry should earn a rate of return that discourages the commitment of additional resources and that induces transferable ones to seek alternate employment, while other sections need funds for modernization or expansion. The other cause of ambivalence is inevitable in an objective presentation of matters containing much that is indeterminate and concerning which there are radically different opinions. In any event, the fact that the analytical portions raise more questions than they answer is pedagogically sound. This provocative and eclectic text should be useful in both economics and commerce courses.

DANIEL MARX, JR.

Dartmouth College

Toll Roads and the Problem of Highway Modernization. By WILFRED OWEN and CHARLES L. DEARING. (Washington, D.C.: The Brookings Institution. 1951. Pp. ix, 204. $2.50.)

The present volume is a short, compact, yet reasonably complete discussion of toll roads as a device for dealing with current problems of highway finance and administration. The first part of the volume includes a description of the extent of existing and proposed toll roads, an analysis of the underlying highway problem and a discussion of the reasons for the revival of toll roads as a device to supplement traditional methods of highway financing. The nature and magnitude of the current highway problem is concisely summed up by the authors' statement that "Highway administrators are confronted with a situation analogous to that of an entire industry being overtaken by functional obsolescence" (p. 23). In support of this conclusion they cite various official estimates to the effect that highway modernization would cost 50 to 60 billion dollars over the next fifteen years, on the basis of 1948 price levels—a sum far in excess of what is now available under current arrangements for highway support.

This accumulated deficiency is attributed to an extremely rapid growth in the need for highway improvement and a failure to adapt traditional methods of highway financing adequately to meet this need. Among the

factors contributing to the pressing need for highway modernization are the early failure to acquire right of way in anticipation of long-run requirements for highway improvement, the neglect of urban traffic problems, deferred highway maintenance and the virtual cessation of new construction during World War II, the great postwar upsurge in motor vehicle traffic, the disproportionate increase in the number of heavy vehicles and the restrictions imposed by spiraling postwar costs of construction and maintenance. On the other hand, despite these rapidly accumulating needs, revenues have lagged because of a reluctance to increase user charges and a general preference for pay-as-you-go policies. Another serious financial handicap is the widespread use of formulas designed to distribute highway revenue as widely as possible whereas the need for improvement is concentrated on a restricted portion of the highway net. On the basis of the foregoing the authors conclude that the fundamental factors underlying the toll-road movement are "the high cost and urgency of the highway improvement program and the resistance to policy reforms essential for meeting the challenge through traditional financing methods" (p. 62).

From the standpoint of motor vehicle users, toll roads have the advantage of providing immediate realization of improvements which might otherwise be indefinitely postponed, and which result in increased safety and comfort and decreased cost of vehicle operation. From the social viewpoint, the toll road has the merit of charging the direct users for the service provided and of avoiding expenditure on facilities which might be relatively little used. The authors find that toll roads do not result in uneconomic duplication of investment where traffic volume warrants the new facility, nor do they find evidence that toll roads have resulted in the neglect of building or maintaining free roads. On the other hand, the use of revenue bonds for financing these facilities, while insuring that only those projects which have reasonable prospects of being self-liquidating will be undertaken, involves appreciably higher financing costs than when bonds backed by general state credit are used. The difference in cost for the two types of obligations in the case of the proposed New York Thruway is estimated at 100 million dollars over the life of the bonds. If general obligation bonds are used, however, there is danger of projects being undertaken which have little prospect of being self-liquidating and which may therefore involve the states in financial embarrassment. A disadvantage of toll roads as compared with free roads is the cost of collecting tolls, but as an offset there are revenues from filling station and restaurant concessions. In the case of the Pennsylvania Turnpike, the latter revenues exceed the cost of collecting the tolls.

The financial record and prospects of the various toll roads are reviewed and it is concluded that modern toll roads have "reasonable prospects of financial success" (p. 110) if they provide materially better facilities than free roads, if they are undertaken only after careful and disinterested studies of costs and traffic potentials, and if politics and special interest considerations are excluded from management. The authors call attention to the special financial advantages enjoyed by the Pennsylvania Turnpike which make it unreliable as a precedent for other projects. They also make the point that in the interest of avoiding double taxation of the toll-road users, the states

should credit toll roads with the proportion of gasoline tax revenues estimated to be generated on such facilities.

The authors urge a sweeping revision of state highway policies, including greater reliance on property taxes for financing those streets and roads which are primarily access facilities, relaxation of restrictions on borrowing for highway purposes and in general an effort to substitute economic and engineering analyses for political considerations in highway construction and finance. They also recommend that the Federal-Aid Road Act be amended to allow the charging of tolls on highways constructed or reconstructed with the aid of federal funds, thus extending to highways the policy already in effect with regard to toll bridges. Finally, they recommend the integration of toll road and general highway administration in the interest of reducing administrative expense and avoiding possible conflict of policies.

The basic question raised by this volume is whether the free road or the toll road principle is preferable for meeting highway needs. On this point the authors conclude that while the benefits of toll roads in particular situations should not be overlooked, "the ultimate solution for the modernization of the highway system requires a much broader attack on the problems of highway administration and finance. Removal of the conditions which have led to the return of the toll road will require a revamped tax structure, liberalized borrowing procedures, and revised expenditure patterns, all designed to raise the necessary funds and dedicate them to the most urgent highway requirements. Meanwhile, the toll road can serve under limited circumstances as a supplement to traditional methods of highway development where opposing pressures make it impossible to achieve promptly the necessary reforms in highway management" (pp. 187-88).

This volume should prove valuable as supplementary reading in transportation courses and should be required reading for those concerned with the formulation and administration of highway policy.

ROBERT W. HARBESON

University of Illinois

Labor

The Structure of Labor Markets. By LLOYD G. REYNOLDS. (New York: Harper & Brothers. 1951. Pp. ix, 328. $4.50.)

The Dynamics of a Labor Market. By CHARLES A. MYERS and GEORGE P. SHULTZ. (New York: Prentice-Hall. 1951. Pp. x, 219. $3.00.)

During the past decade, notions concerning wage structures and worker and employer behavior have been undergoing radical change. Labor economists, from their experience with the National War Labor Board and from field studies, became aware of the naïveté of much traditional economic theory with respect to the motivation and practices of manual workers, business management, and labor unions. Widespread knowledge of the flimsy foundation of neo-classical theory has led to a number of field investigations to provide a better factual basis for testing hypotheses and for reformulating wage theory. The books under review set forth the results of two rather

elaborate and detailed studies of wages and labor mobility, job practices and desires, and company and union policies in a particular labor market area.

These two studies differ somewhat because of differences in objectives and in environmental conditions. Reynolds' book is a final report of the findings of a pioneering study and also an attempt to develop its implications for labor-market theory and policy. Myers and Shultz is a careful attempt, in a relatively small community suffering significant unemployment, to test the hypotheses already developed in other studies, especially those set forth in the preliminary report of Reynolds' study (Reynolds and Shister, *Job Horizons* [1949], reviewed in this *Review*, September, 1949, pp. 1061-62).

Because Myers and Shultz confirm some but not all of Reynolds' findings, it is important to know the differences in the setting of the two studies. Reynolds conducted his in a city of 350,000 (confidentially, New Haven) during 1946-48, when it was experiencing full employment and labor shortages. Myers and Shultz operated in a community of 35,000 (confidentially, Nashua, N.H.) in the 9-month period ending in mid-1949, during which a large lay-off occurred so that unemployment ranged from 9 to 12 per cent of the labor force during most of their field study. Reynolds' study is based on interviews with 850 manual workers selected at random in three groups (450 from a city-wide directory, 350 who had changed jobs during the preceding year, and 50 unemployed); Myers and Shultz interviewed 195 former employees of a partially closed textile mill (51 who quit right after the prospective shutdown was announced and 144 who waited to be laid off). Both studies included interviews with the managements of the chief manufacturing concerns, the local union officials, and the local employment service staff. Less than half the manufacturing employees in New Haven were under union contract compared with 90 per cent in Nashua. Myers and Shultz quote extensively from their interviews.

The findings upon which both studies apparently agree can be summarized as follows:

1. In a community, a range of rates exists for the same grade of labor, so that there is no one rate which "clears the market." Any differences in quality of employees are not sufficient to compensate for the wage differentials, nor can such real wage differentials be explained by the non-wage terms of employment, which are better in the high-wage firms. Reynolds found among the 50 firms interviewed some 21 using the job evaluation plan of the National Metal Trades Association and that, among those 21 plants, the highest-wage one was paying about 60 per cent above the lowest-wage one for Labor Grade 10 (the lowest grade for male employees). Myers and Shultz discovered that dividing their 38 firms into submarket groups by type of labor employed reduced the range of dispersion (as one would expect, partly as the result of reduced numbers), but the two largest subgroups with 15 and 7 firms had spreads showing the minimum wage in the subgroup's highest-paying firm to be 75 and 43 per cent respectively above that of its lowest-paying concern. Reynolds studied the dispersion of the starting rates for 28 manufacturing concerns between 1940 and 1948 and discovered, contrary to his expectations, that the interplant differences were about as great percentage-wise in July, 1948 in a tight labor market as they were in July, 1940 when widespread unemployment prevailed, yet in 1948 "the

low-wage firms were still able to hire enough labor to meet their production schedules."

2. Most production jobs are obtained through informal contacts (primarily through relatives and acquaintances, secondarily by random application at plants), and workers do not make a systematic canvass of job openings, weighing alternatives and making choices according to greatest net economic advantage. Their first jobs are generally blind alley ones. Once established in a "satisfactory" job, manual workers tend to be "out of the market," not interested in the possibility of a better job elsewhere. Their information about jobs is surprisingly fragmentary and incorrect, although job knowledge apparently was better in the smaller community; yet even there seemingly less than one-sixth of the workers interviewed knew about the wages on their present job before applying for it as new employees in the plant (Table 11, eliminating workers previously employed there). Reynolds found that little relation existed between the proportion of workers who regarded their wages as "fair" or who thought their plant's wage level compared favorably with other plants and the actual rank of the plant in the hierachy of the area's wage structure. He also discovered that the actual movement of labor among the younger shiftable segment of the labor force in 1946 and 1947 was not predominantly toward higher-paying jobs, and that "there is little evidence that a high wage level causes more workers to *apply* at a particular plant." On the basis of such data, he concludes that the wage structure is not shaped by actual or potential labor mobility and that the concept of a labor-supply curve to the firm has little meaning or usefulness. On the basis of their study, Myers and Shultz apparently believe labor movement to be somewhat less random in nature and more often influenced by economic considerations.

3. Both studies seem to agree that workers are responsive to a variety of job satisfactions, that wages and physical characteristics of jobs are among the most important, and that the non-wage factors combined generally outweigh wages in job satisfaction although it is difficult to separate one factor from the whole bundle of job attributes. Myers and Shultz cite the case of a firm in the bottom wage-paying group and with few jobs then paying more than 65 to 75 cents an hour, yet able, through good personnel practices, to eliminate avoidable absenteeism, achieve very low labor turnover, and have a long waiting list for employment there. Perhaps because their interviewees were recently subject to lay-off in a loose labor market, Myers and Shultz found more stress on steadiness of employment and less on independence of supervision, fairness of treatment, congenial fellow workers, and inherent job interest than Reynolds did. They concluded that the shutdown changed workers' views of the relative importance of different job attributes, so that under certain circumstances the economic motives in labor mobility need more emphasis than under other circumstances.

4. Companies, like workers, have multiple objectives in employment and follow hiring, lay-off, promotion, and wage practices that prevent real competition in the purchase of labor. Reynolds points out that each company tends to become a water-tight compartment or separate labor market, largely because of company practices; that for internal recruitment for job openings one needs to think mainly in terms of status and hierarchy; and that the range between occupational rates within a plant is probably much greater

than it needs to be for labor-supply purposes. Both studies seem to agree that employee dissatisfaction, morale, and consequent low productivity are more significant than worker movement in causing companies to increase wages. Both bring out the importance of managerial improvements as cost-saving adjustments for wage increases that pinch profits, thus supporting the so-called "shock theory."

Myers and Shultz emphasize the possibilities of reduced labor costs as the result of wage administration in a loose labor market. Increased unemployment tended to weaken worker resistance to changes in production methods, to permit tightened production standards, and to enable some firms to obtain new employees at a lower rate in their wage scale than they could before the lay-off. The authors may, however, overstress the actual effects on wage payments, for none of the firms cut the wage rates of those already employed, and firms representing half of the manufacturing employment reported no effect on rates paid for new employees, those taking advantage of the loose market in hiring new employees being chiefly the low-wage and small, non-union firms. Reynolds' contention that there is little chance of an excess of workers "breaking" the wage rates for particular occupations seems to be valid at least for established manufacturing concerns of any size and reputation. Also Myers and Shultz may, judging by their Table 23 and workers' comments quoted (pp. 120-25), give the impression that workers had more specific knowledge concerning wage scales in different firms than actually was the case, although apparently they were as a group better informed than Reynolds' interviewees.

Little in the way of recommendations for labor-market policy or revision of wage theory is offered by Myers and Shultz, who conclude "As job opportunities changed, workers, employers, and unions acted in ways that are consistent with the market analysis developed by economists." They do not, however, explain exactly what analysis they have in mind (*i.e.*, whether it includes labor-supply and labor-demand curves for the individual firm and the local area), nor do they indicate how they measure consistency (*i.e.*, whether failure to operate inconsistently and whether a wide range of indeterminacy are considered as consistent).

Reynolds's final chapters are entitled, "Toward a Revision of Labor Market Theory" and "The Objectives of Labor Market Policy," the latter consisting of sections on "norms for wage policy," "optimum movement of labor and employment service operations," and "the school system and occupational choices." These chapters were, to this reviewer, rather disappointing. The chapter on theory offers little that is new, contains no mention of the marginal productivity theory, and does not develop an alternative body of theory. The criticisms of Henry C. Simons in these two chapters, although good, can be found in previous writings. The suggestions for economy-wide job evaluation and systematic training in labor-market matters in high school seem a bit visionary.

These two studies have added greatly to our knowledge of the motives and behavior of workers and managements, and they offer many hypotheses for further testing. They demonstrate the need for additional studies of worker and management motivation and of the dimensions of industrial employment

under different conditions. Above all, they emphasize the need to develop a new body of theory, or a reformulation of existing theories, that (1) is based on multiple motivation at worker, management, and consumer levels, (2) explains group influences and evolutionary changes in the attitudes and goals of workers, management, and consumers, and (3) is integrated with the other social sciences.

The more "mixed" our economy becomes, the greater is the need for theoretical constructs that will explain the facts of everyday life in America today and in the days to come (both the short and the long run). We already know the shortcomings of existing theories for such purpose, but old theories never die, and it takes a new theory to make an old one obsolete. In a highly integrated discipline like economics, real progress involves the accumulation of enough disturbing factual data and of sufficient theoretical advance to disrupt well-worn modes of thought and to penetrate the intellectual walls of the elementary text. Field studies such as these may well bring about another "revolution" in economic thought.

RICHARD A. LESTER

Princeton University

Destination Unknown—Fifty Years of Labor Relations. By WALTER GORDON MERRITT. (New York: Prentice-Hall. 1951. Pp. x, 454. $4.25.)

The protagonists before the Presidential fact-finding board in the General Motors dispute in 1945 afforded a symbolic contrast between the new and the old in labor relations. Walter Reuther for the UAW—youthful, militant, toying with daring ideas; Walter Gordon Merritt for the Corporation—suave, a bit tired, and sophisticated in the arts of the adversary proceeding. At the time, it seemed to this reviewer, the forward thrust of history had overtaken and passed the ideas that the attorney represented. One comes away from his impersonal autobiography with much the same feeling.

Mr. Merritt's lifetime spans a tumultuous half-century of labor history and is rich in great cases. He represented Loewe in the *Danbury Hatters* case, the Duplex Printing Press Co. in *Duplex v. Deering,* the anthracite operators in the 1922 strike, and many other employers. This book, while in part an informal history, is more significantly a recapitulation of his philosophy of union-management relationships.

Mr. Merritt is, essentially, an individualist whose career has witnessed the slow attrition of theory under the force of events. Though he would prefer a society in which men stood alone, he has come to recognize that it is not attainable in a technical, interdependent economy. As a consequence, he is not, as many think, on the far right but somewhat closer to center. He has long opposed the yellow-dog contract, a fact, incidentally, that lost him the retainer in the *Hitchman* case. He disagrees with those who would amend Taft-Hartley to outlaw industry-wide bargaining, since "I am satisfied it cannot be done by legal fiat." He is against compulsory arbitration except for coal, the railways, and the public utilities. The favorite weapon in his holster, of course, is the injunction, and he comes vigorously, and less than persuasively, to its defense.

Mr. Merritt is disturbed lest the spread of unionism should in the long

run destroy our free society. This is not because unions are inherently inimical to capitalism, but rather because union leadership is pressed to justify itself by vilifying the employer. The risk, as he sees it, is that sustained propaganda will be converted into results. "Those who sow the seeds of discord may harvest an unwished-for crop."

Destination Unknown, given its rather loose organization, is a not unwelcome addition to recent labor history from the employer's side.

IRVING BERNSTEIN

University of California, Los Angeles

Readings in Labor Economics and Industrial Relations. Edited by JOSEPH SHISTER. (Philadelphia: J. B. Lippincott Co. 1951. Pp. x, 661. $4.75.)

This collection of readings is designed to supplement the textbook chosen for the basic course in Labor Economics. Instructors are aware of the shortcomings of any standard textbook which must deal with the multitude of varied and controversial subjects usually covered in the introductory labor course. A well-rounded text serves to "expose" the student to the many diverse problems and issues; it should also provide sufficient focus and integration to discourage the student (and instructor) from the two temptations of "riding off in all directions" and getting nowhere in particular, or, on the other hand, of riding a particular hobby to the exclusion of all else. At best, a textbook can include only a limited amount of factual data and theoretical discussion with the result, as the editor of this volume points out in his Preface, that the student is not afforded sufficient "opportunity of being exposed to different approaches and viewpoints."

The problem which any instructor has to face is how to obtain this broader exposure. Is the answer a collection of selected essays, neatly classified and bound between two covers? Or should the student be turned loose in the library with a suggested reading list, and given the challenge and opportunity of learning the thoughts and interpretations of various authorities at their source? It is the opinion of the reviewer that the short-cut, spoon-fed device of the anthology is a dubious aid in the educational process; that it is as important for a student to learn *where* material on any subject can be found as it is to acquire a body of knowledge from one or two books; that it is an injustice to the student to be encouraged to get the impression that books are the sole source of knowledge, especially in a dynamic field such as labor problems where reference to periodicals is the only way of keeping informed on current thinking and developments. There is one justification for a "collected readings," namely, if it makes materials available which are out-of-print or otherwise inaccessible to the average student. But this does not pertain to the present volume, for with the one exception of excerpts from Hoxie's *Trade Unionism,* all the selections are from recent publications which can be, or at least should be, found in any college library.

Not all instructors will take this negative view, and those who see value in the "collective readings" medium will find this volume affords a presentation of some of the best thinking on the labor issues of the day. The volume

is divided into five Parts under the headings: The American Working Class; Trade-Unionism; Collective Bargaining; Employment Security; Income and Leisure Security. Each Part is further classified into sections with a half dozen or more selected essays by various authorities. Preceding the selections in each of the five Parts is an introduction written by the editor which, in his words, "is designed to provide a framework in terms of which the ensuing selections can be more readily understood."

Most of the authors are college professors; a few are business and union representatives, and several selections are from government reports. As already indicated, practically all the articles are of recent date—that is, written within the last five or six years. Unfortunately, several which deal with some of the "hottest" issues were written before the passage of the Taft-Hartley Act, which fact outmodes some of the discussion.

The volume includes 93 selections by more than 40 different authors—an indication of its broad coverage of subject matter and diversified approach to the problems discussed. The material is well organized and the Appendix includes a series of questions which many instructors will find helpful for class discussion, term papers and examinations.

FLORENCE PETERSON

Bryn Mawr College

Unclassified

The Lonely Crowd—A Study of the Changing American Character. By DAVID RIESMAN, in collaboration with REUEL DENNY and NATHAN GLAZER. (New Haven: Yale University Press. 1950. Pp. xi, 386. $4.00.)

This book represents an extremely fruitful attempt to develop a typology for the understanding of industrial, especially American, society. Riesman classifies societies according to ways in which social conformity is accomplished, and relates them to phases of population development. In societies with a high birth and death rate, conformity is insured by the tendency to follow tradition, as in many non-literate cultures and in precapitalist Europe. In the phase of transitional population growth, where population increases absolutely because of a declining death rate, an internalized set of general goals, implanted early in life, insures conformity as in industrial Europe and America of the nineteenth century. The phase of incipient population decline, moving towards a net decrease in population, is accompanied by the emergence of the other-directed character orientation. Here "conformity is insured by the tendency to be sensitized to the expectations and preferences of others. . . . The contemporaries are the source of direction for the individual. . . . The goals toward which the other-directed person strives shift with that guidance; it is only the process of . . . paying close attention to the signals from others that remain unaltered through life."

Inner-directedness is related to an economy of scarcity and to periods of increased mobility, rapid accumulation of capital with intense technological change, and economic expansion. Inner-directed middleclass man has an unconscious inner "gyroscope" which makes him strive for the internalized goals of acquisition of goods, fame and power, evaluated in terms of money.

He is interested in the production of physical things, in technological problems, in work for work's sake, and in the competitive pursuit of these goals. Enjoyment of things is of secondary importance. Work is considered a protection against character failure. Careers are based on systematic life plans. Riesman's characterization of the inner-directed person often reads like a translation of marginal utility analysis into sociopsychological terms.

Other-directedness emerges in an economy of abundance in capital-rich periods with large productive capacity. The problems of production and technology have been solved. New techniques are used in industry to manipulate people through communication and control. Technical skill declines but skill in handling human relations is required from managers sensitive to the attitudes of their staff and line. "Antagonistic cooperation" changes the character of competition from "free trade" to "fair trade" where price cutting is outlawed. The inner-directed goal of profit maximization becomes less important.

Management is influenced by the opinions of various veto-groups such as consumers, suppliers, labor, government, etc. Executives have exchanged the "public-be-damned" attitude for a "radar" which registers and adapts itself to public opinion. Consumption, previously a by-product of the accumulation of wealth, becomes an end in itself. From early youth people are trained as consumers. The emphasis shifts from the display of wealth to that of tastes. The relation to commodities becomes personalized; people do not want so much to acquire the same things as others but to duplicate the others' experience in consumption. Commodities change from an ultimate end to a means of relating oneself to others.

The most interesting aspect of this book to the economist is the coincidence of its findings with modern economic theory. The growing emphasis on consumption is reflected in Keynesian economics with its positive evaluation of spending. Other-directed attitudes towards consumption and leisure form the socio-cultural background from which the concept of product-differentiation was derived. A new, possibly unconscious, attitude towards goods, may have caused the blurring of the lines between commodities, competitors, and markets, analyzed in Chamberlinian and similar models. The emphasis on goals other than profit-maximization in recent writings on the theory of the firm may be interpreted as recognition of the changing character of American business management. Thus, differences of opinion about socio-psychological assumptions in economic theory could perhaps be resolved by recognizing that they stem from different character orientations. The assumptions of neoclassical theory about rational economic behavior may have been applicable to a society of inner-directed economic men. The "non-economic" elements, recently introduced into the theory of the behavior of consumers and corporate management, may be a symptom of growing "other-directedness."

This penetrating investigation of the American social character presents the economist with a tool for the understanding of his own theories in the light of a secular change in the basic value-attitudes of our times.

WALTER A. WEISSKOPF

Roosevelt College

TITLES OF NEW BOOKS

Economic Theory; General Economics

ALT, R. M. and BRADFORD, W. C. *Business economics—principles and cases.* (Chicago: Richard D. Irwin. 1951. Pp. xii, 581. Text ed., $5.50.)

BAUMOL, W. J. With a contribution by R. TURVEY. *Economic dynamics—an introduction.* (New York: Macmillan. 1951. Pp. xiii, 262. $5.)

BERTOLINO, A. *Esplorazioni nella storia del pensiero economico.* (Firenze: La Nuova Italia. 1950. Pp. xi, 417.)

A group of previously published papers, ranging from the ancient world to Keynes and Beveridge, and including some unusual and interesting subjects such as John Gower, Bacon, Fénelon, and Filangieri.

BRINKMANN, C. *Wirtschaftsformen und lebensformen—gesammelte schriften zur wirtschaftswissenschaft und wirtschaftspolitik.* (Tübingen: J.C.B. Mohr [Paul Siebeck]. 1950. Pp. 550. DM 26,80; cloth, DM 29,80.)

BÜCHNER, R. *Grundfragen der wirtschaftspolitik.* (Berlin: Duncker und Humblot. 1951. Pp. 46.)

CARELL, E. *Allgemeine volkswirtschaftslehre.* (Munich: Richard Pflaum Verlag. 1951. Pp. 476. DM 18, —; cloth, DM 19,50.)

DUTT, S. N. *Conflicting trends of economic thought—a critical and comparative study of classical, Keynesian, Marxian and socialist economics.* (Calcutta: Institute of Commerce and Economics. 1951. Pp. vi, 204. Rs. 7/—.)

EUCKEN, W. *Die grundlagen der nationalökonomie.* 6th ed. (Berlin: Springer-Verlag. 1950. Pp. xvii, 279. DM 18,60.)

Also recently published in translation, "The Foundation of Economics," by the University of Chicago Press.

HESS, A. P., JR., GALLMAN, R. E., RICE, J. P., and STERN, C. *Outside readings in economics.* (New York: Thomas Y. Crowell Co. 1951. Pp. xiii, 877. $2.75.)

KUMARAPPA, J. C. *Gandhian economic thought.* (Bombay: Vora and Co. 1951. Pp. 72. Rs. 1-4.)

ROBERTSON, H. M. *The Adam Smith tradition—inaugural lecture delivered before the University of Cape Town 13 October 1950.* (Cape Town: Oxford Univ. Press. 1950. Pp. 23. 2 *s.*, 6 *d.*)

RÜSTOW, H.-J. *Theorie der vollbeschäftigung in der freien marktwirtschaft.* (Tübingen: J.C.B. Mohr [Paul Siebeck]. 1951. Pp. 329. DM 15,60.)

SCITOVSKY, T. *Welfare and competition—the economics of a fully employed economy.* (Chicago: Richard D. Irwin. 1951. Pp. xvi, 457. $5.50.)

SIMONDE DE SISMONDI, J.-C.-L. *Nouveaux principes d'économie politique.* 3rd ed. re-issue. (Genève-Paris: Les Éditions Jeheber. 1951. Pp. 345.)

SRAFFA, P., editor, with the collaboration of M. H. DOBB. *The work and correspondence of David Ricardo.* Vol. I, *On the principles of political economy and taxation.* Vol. II, *Notes on Malthus' principles of political economy.* (New York: Cambridge Univ. Press, for the Royal Economic Society. 1951. Pp. lxii, 447; xviii, 463. Each vol. $4.75.)

The following is quoted from the publisher's announcement:

The plan is for eleven volumes in all, of which nine are already in proof. The story of this edition and of how it comes to be complete, is told in the Preface to the first volume. Two quite separate dramatic discoveries of papers were made; the first in 1930, when all the important letters received by Ricardo were discovered in the possession of descendants; and the second in 1943, when the whole series of Ricardo's

letters to James Mill were found, as well as a number of new writings. The volumes containing Ricardo's correspondence carry 553 letters, of which more than half are now published for the first time. These volumes print not only Ricardo's own letters, but also those received by him from his chief correspondents. Several new papers and notes are also now printed for the first time, and his speeches in the House of Commons (scattered through eleven volumes of Hansard) have been collected. The following list gives the titles of the first nine volumes: I, Principles of Political Economy and Taxation; II, Notes on Malthus; III and IV, Pamphlets and Papers; V, Speeches and Evidence; VI to IX, Letters. Two additional volumes are still in preparation and will contain further biographical material, including the Journal of a Tour on the Continent, and a General Index to the whole work.

STAVENHAGEN, G. *Geschichte der wirtschaftstheorie.* (Göttingen: Vandenhoeck und Ruprecht. 1951. Pp. 320. DM 19,50.)

STEPHEN, L. *The English utilitarians.* Vol. I, *Jeremy Bentham.* Vol. II, *James Mill.* Vol. III, *John Stuart Mill.* Series of reprints of scarce works on political economy, nos. 9, 10, 11. (London: London School of Econ. and Pol. Sci. 1950. Pp. viii, 326; vi, 382; vi, 525. £2. 2s per set.)

VÖLK, K. H. *Ganzheitliche wirtschaftswissenschaft.* (Munich: Richard Pflaum Verlag. 1950. Pp. 216.)

WEDDIGEN, W. *Wirtschaftsethik—system humanitärer wirtschaftsmoral.* (Berlin: Duncker und Humblot. 1951. Pp. 214. DM 12,70.)

ZIMMERMAN, L. J. *Geschiedenis van het economisch denken.* 2nd ed. (The Hague: Uitgeverij Albani. 1950. Pp. 276. Geb. *f.* 8,90.)

Economic History; National Economies

BENZANSON, A., assisted by DALEY, B., HUSSEY, M., and DENISON, M. C. *Prices and inflation during the American Revolution—Pennsylvania 1770-1790.* Wharton School of Finance and Commerce, Indus. Research Dept., research stud. XXXV. (Philadelphia: Univ. of Pennsylvania Press. 1951. Pp. xvi, 362. $6.75.)

BORAH, W. *New Spain's century of depression.* Univ. of California pub. in Ibero-Americana: 35. (Berkeley and Los Angeles: Univ. of California Press. 1951. Pp. 58. 75c.)

CARLSON, T. L. *The Illinois military tract—a study of land occupation, utilization and tenure.* Illinois stud. in the soc. sci., vol. XXXII, no. 2. (Urbana: Univ. of Illinois Press. 1951. Pp. vii, 218. $2.50; cloth, $3.50.)

CHASE, S. *"Operation Bootstrap"—report of progress, 1951.* Prepared for the NPA Business Committee on National Policy. Planning pamph. no. 75. (Washington: Nat. Planning Assoc. 1951. Pp. vii, 71. $1.)

CLOUGH, S. B. *The rise and fall of civilization—an inquiry into the relationship between economic development and civilization.* (New York: McGraw-Hill. 1951. Pp. xiii, 291. $4.50.)

FAY, C. R. *Palace of industry, 1851.* (New York: Cambridge Univ. Press. 1951. Pp. 156. $3.)

A delightful illustrated account of the "Crystal Palace" no doubt timed for the Festival year a century later.

GEORGE, M. D. *London life in the eighteenth century.* Series of reprints of scarce works on political economy, no. 12. (London: London School of Econ. and Pol. Sci. 1951. Pp. xii, 452.)

OTTO, H.-J. *Strukturwandlungen und nachkriegsprobleme der wirtschaft Italiens.* Kieler stud. 18. (Kiel: Institut für Weltwirtschaft, Universität Kiel. 1951. Pp. 106. DM 7,50.)

PATTERSON, E. M., editor. *Lessons from Asia.* (Philadelphia: Am. Academy of Political Science. The Annals, July, 1951. Pp. vi, 197. $2.)

Contains a section of articles on economic and social aspects.

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NOTES

International Economic Association

Professor G. Haberler has provided the following note:

Two round-table conferences organized by the International Economic Association were held in Talloires (France) in the late summer of 1951. The first one, concerned with Methods of Teaching Economics (August 27-31, 1951), was attended by about ten economists from the United States, United Kingdom, France, Germany, Egypt, India, Turkey, Italy, and Sweden. The chief American participant was Professor Horace Taylor, of Columbia University, and the chairman of the Conference and *rapporteur general* was C. Guillebaud, of Cambridge University. Written reports on the organization and the major problems of teaching economics in institutes of higher learning in the above-mentioned countries (and Mexico) were submitted. These papers formed the basis for a systematic exchange of views on the principal problems, the weaknesses and points of strength of economic instruction in the various countries. The papers, together with a summary and a report on the discussion from the pen of Mr. Guillebaud, will be published in 1952. Place, date and price of this publication will be announced in a later issue of the *American Economic Review*.

The other round-table conference was held from September 2 to 8. Its subject was "Monopoly and Competition and Their Regulation." It was attended by about twenty-five economists from some twelve countries. The program had been worked out by a committee under the chairmanship of Professor Edward H. Chamberlin, of Harvard University. Papers were submitted in writing. Among them were country papers containing background material on subjects like Government Regulation of Monopoly, General Public Attitudes, research currently done in the general area, as well as a brief sketch on the Market Structure, Concentration of Industry, and the like for the United States, the United Kingdom, Canada, France, Germany, the Scandinavian countries, Italy and South Africa.

Other papers dealt with the following subjects: Real Economies of Integration and Large-scale Production vs. Advantages of Domination; Problems of Entry and Exit; Theoretical Problems of Competition; The So-Called Wastes of Competition; Competition and the Objectives of Government Policy; Monopoly and the Problem of Stabilization; Innovation and Technical Progress under Monopoly and Competition.

The papers, together with the summary of discussions and an introduction by Professor Chamberlin, will be published in 1952. Details will be announced in a later issue of the *American Economic Review*.

The International Economic Association plans to publish an annual volume, *International Economic Papers*, which will make available in English translation important articles written and published originally in other languages. The first volume is scheduled to be published by Macmillan in London and New York in December, 1951. It will contain articles by Ragnar Frisch, Erich Schneider, Heinrich v. Stackelberg, Jan Tinbergen, among others.

Research Fellowships and Grants

The Social Science Research Council has announced fellowships and grants of two distinct types to be offered in 1952: (1) Those designed exclusively to further the training of research workers in social science and designated as *Research Training Fellowships* and *Area Research Training Fellowships;* (2) Those designed to aid scholars of established competence in the execution of their research, namely, the *Travel Grants for Area Research, Grants-in-Aid of Research*, and *Faculty Research Fellowships*. None of the awards in the second group is available to students working for degrees.

Inquiries should be addressed to the Social Science Research Council, 726 Jackson Place,

N.W., Washington 6, D.C., and applications, on forms provided by the Council, must be filed not later than January 15, 1952.

An announcement describing Faculty Research Grants to Liberal Arts Colleges will be issued by the Council in January, 1952.

New Publication

Der Osterreichische Volkswirt, the Austrian economic weekly, is now publishing a monthly edition in English, *The Austrian Economist.* The price is $6.00 annually, the address Vienna, 1., Wipplingerstrasse 34, Austria.

Deaths

A. H. Armbruster, dean of the College of Commerce, Ohio University, Athens, Ohio, died May 5, 1951.

Henry C. Levy, of The City College, New York, died March 29, 1951.

Roswell C. McCrea, former dean of the Graduate School of Business of Columbia University, died July 3, 1951.

Appointments and Resignations

Lawrence Abbott has been appointed associate professor in the department of economics and sociology of Mount Holyoke College.

Edward Albertal, formerly of the University of Minnesota, has joined the staff of the Department of Economic Affairs of the United Nations.

Russell Altenberger has been appointed instructor in statistics at Alabama Polytechnic Institute.

O. J. Anderson has been promoted from instructor to assistant professor of business organization and management in the College of Business Administration, University of Nebraska.

James W. Angell has been on leave from Columbia University to serve with an Expert Group of the United Nations appointed to prepare a report on reduction of the international impact of economic recessions.

Melvin L. Anshen, formerly of the University of Indiana, will become professor of industrial administration at Carnegie Institute of Technology in January, 1952. He is now serving as administrator of Program and Requirements of the Defense Production Administration.

Paul Arnolds-Patron, formerly of Whitman College, has been appointed to the staff of the department of economics, School of Commerce, Accounts, and Finance, New York University.

Arthur G. Ashbrook, Jr., has resigned from Duke University and is now chief economist in the Office of Price Stabilization at Charlotte, North Carolina.

Morton S. Baratz has been appointed instructor in economics at Yale University.

Grace Beckett has been promoted from assistant professor to associate professor of economics at the University of Illinois.

Norton M. Bedford has been promoted from assistant professor to associate professor of accounting at Washington University.

Anne Bezanson was named professor emeritus upon retirement from the Wharton School of Finance and Commerce, University of Pennsylvania, in June, 1951.

Walter E. Blackledge has accepted an appointment as assistant professor of management at Los Angeles State College of Applied Arts and Sciences.

Roy G. Blakey, of the University of Minnesota, who has been visiting professor of economics at the University of California at Los Angeles the past three years, is lecturing at the University of Ankara, Turkey.

H. S. Bloch directed a U.N. Technical Assistance Conference on Comparative Fiscal Administration in Geneva in the summer and is now serving as a technical assistance expert in Israel.

Richard M. Bourne has been promoted from assistant professor to associate professor of economics and labor relations in the College of Business Administration, University of Nebraska.

Edward H. Bowman has been appointed instructor in management at The Ohio State University.

Dorothy S. Brady is with the Bureau of Labor Statistics, Department of Labor.

Marjorie S. Brookshire has accepted an appointment as instructor in economics at the University of Texas.

Paul Bullock, Jr., has resigned from the faculty of Occidental College.

Carl E. Calohan has resigned from the University of Florida to become chief price analyst for the Office of Price Stabilization in Savannah, Georgia.

Rondo E. Cameron has been appointed instructor in economics at Yale University.

Vivian Carlip has been appointed instructor in the department of economics and sociology at Mount Holyoke College.

Reynold E. Carlson, on leave of absence from Vanderbilt University, is serving as economic consultant to the American section of the Joint Development Commission for Point Four in Rio de Janeiro, Brazil.

Philip W. Cartwright has returned to the University of Washington after serving as assistant regional economist and district price executive with the Office of Price Stabilization in Seattle.

Bernard F. Cataldo has been promoted from associate professor to professor of business law in the Wharton School of Finance and Commerce.

W. E. Chalmers has been granted leave of absence from the University of Illinois to serve with the Wage Stabilization Board in Washington, D.C.

Gordon Chapman has been appointed faculty lecturer in marketing in the School of Business, Indiana University.

William H. Chartener, formerly associated with Editorial Research Reports, is now an industrial relations analyst with the Wage Stabilization Board in Washington, D.C.

I-Nien Chien has resigned from the University of Minnesota, to accept a position as market analyst with the Wyandotte Chemical Corporation.

George H. Cleaver has been appointed assistant professor of economics at Bard College.

Clay L. Cochran has been promoted from assistant professor to associate professor of economics at the University of Oklahoma.

John A. Cochran has been given leave of absence from the University of Illinois for military service.

Robert P. Collier has been appointed acting assistant professor of economics at the University of Washington.

Morris A. Copeland has been granted a leave from Cornell University to accept a Fulbright grant to lecture at the University of New Delhi, India.

Earl C. Crockett, professor of economics at the University of Colorado, has been appointed chairman of the department of social sciences, University of Colorado.

James A. Crutchfield, on leave of absence from the University of Washington, is serving as assistant regional economist with the Office of Price Stabilization in Seattle.

Howard A. Cutler has resigned from the University of Illinois and has accepted an appointment as assistant professor of economics at Pennsylvania State College.

John A. Daiker has been promoted from instructor to assistant professor of accounting in the College of Business and Public Administration, University of Maryland.

William R. Davidson has been promoted to assistant professor of business organization at The Ohio State University.

Raymond C. Dein has been promoted from associate professor to professor of accounting in the College of Business Administration, University of Nebraska.

William Diebold, Jr., of the Council on Foreign Relations, has been appointed visiting lecturer in economics, European Institute, at Columbia University, for the spring session of 1952.

Joel B. Dirlam has been appointed instructor in economics at the University of Connecticut.

Harry M. Dixon has joined the staff of the Office of Price Stabilization, Seattle, Washington.

Leonard A. Doyle, formerly of the University of California, has been appointed acting associate professor of economics at Stanford University.

John F. Due has been promoted from associate professor to professor of economics at the University of Illinois.

C. L. Dunn has been appointed assistant professor of accounting in the College of Commerce, Louisiana State University.

Howard S. Dye has resigned from the staff of the department of economics of the University of Texas to accept an associate professorship at the University of Tennessee.

William Dymond has resigned as assistant professor of business administration at the University of Massachusetts.

Robert S. Eckley has resigned from the University of Kansas to take a position as industrial economist in the Federal Reserve Bank of Kansas City.

Robert Edminster has been appointed acting assistant professor at the University of Washington.

Robert Eisner has been promoted from instructor to assistant professor of economics at the University of Illinois.

Edmund A. Ennis has been given military leave of absence from the Wellington Corporation, Philadelphia, Pa., to return to active duty with the United States Air Force.

Grover W. Ensley, who had served two years as associate staff director, has been appointed staff director of the Congressional Joint Committee on the Economic Report in succession to Theodore Kreps.

Robert D. Entenberg, of the University of Missouri, has been appointed assistant professor of marketing at the University of Georgia.

Gerald F. Franklin has been appointed instructor in the department of government and economics in the School of Business Administration of the University of Miami.

Seymour Friedland has resigned from the Bureau of Labor Statistics to accept an appointment as instructor in economics at Middlebury College.

David Felix has been reappointed acting assistant professor at the University of Washington.

D. I. Fellers has been appointed instructor in accounting at Louisiana State University.

Robert Ferber has been promoted to research associate professor of economics in the Bureau of Economic and Business Research, University of Illinois.

Frank W. Fetter, of Northwestern University, is conducting a weekly seminar in international trade at the University of Wisconsin this semester.

Allan Fisher, formerly of the United States Treasury, has been appointed professor of business administration, College of Business and Public Administration, University of Maryland.

Martin R. Gainsbrugh has been promoted from adjunct associate professor to adjunct professor of economics in the School of Commerce and Graduate School of Business Administration of New York University.

L. A. Gaitanis has been promoted from assistant professor to associate professor of business organization and operation at the University of Florida.

Walter Galenson has resigned as assistant professor of economics at Harvard University and is now a member of the staff of the Industrial Relations Institute, University of California.

George Garvy, of the Federal Reserve Bank of New York, is in Nicaragua making a survey of fiscal problems as consultant to the International Bank for Reconstruction and Development.

Morris D. Glickfeld is on leave from the University of Washington on a Fulbright award for research at the University of Bombay.

Carter Goodrich has been on leave from Columbia University to serve as chief of a United Nations Technical Assistance Mission to Bolivia.

Erwin Graue, professor of economics at the University of Idaho, has received a Fulbright award to teach at the University of Ankara, Turkey in the current academic year.

Richard W. Graves has been appointed instructor in statistics in the College of Commerce and Business Administration of Tulane University.

Henry Grayson, formerly at Superior State College, Wisconsin, has been appointed associate professor of economics at the University of Maryland.

Peter Greenwood has been promoted to associate professor in the department of finance of the School of Commerce, University of Southern California.

Everett E. Hagen has accepted a position as economic consultant to the Burmese government in Rangoon, Burma.

Earl C. Hald is on leave from the University of Washington to serve as regional economist with the Office of Price Stabilization in Seattle.

A. S. Hall has been appointed instructor in economics at the University of Illinois.

Franklin P. Hall is on leave from Connecticut College to serve as chief economist in the Connecticut District Office of the Office of Price Stabilization.

James K. Hall, on leave from the University of Washington, is serving as regional price executive in the Office of Price Stabilization in Seattle.

Frank Hanna has been promoted to professor of economics at Duke University.

C. Lowell Harriss, of the department of economics of Columbia College, attended the September meeting of the International Fiscal Association in Zurich and, as a director, the Conference of the International Institute of Public Finance in London.

Everett D. Hawkins is on leave from Mount Holyoke College to serve as program planning officer for the Special Technical and Economic Mission to Indonesia of the Economic Cooperation Administration.

Samuel P. Hayes, Jr., has resigned from the Technical Cooperation Administration of the Department of State to join the Economic Cooperation Administration as chief of the Special Technical and Economic Mission to Indonesia.

Arnold C. Harberger, of the Johns Hopkins University, has been on special assignment with the President's Materials Policy Commission.

William H. Hayt has been appointed instructor in marketing in the School of Business, University of Chicago.

William Hefner has been appointed assistant professor of business administration at the University of Massachusetts.

O. C. Herfindahl has resigned as assistant professor of economics at the University of Illinois and has accepted a position in the Department of Interior, Washington, D.C.

Edward S. Herman, formerly of the University of California, is instructor in economics at the Carnegie Institute of Technology.

Paul T. Homan has been appointed chairman of the department of economics at the University of California, Los Angeles.

Marshall Howard has been appointed assistant professor of business administration at the University of Massachusetts.

Elmo L. Jackon has returned to the University of Florida as associate professor of economics after serving as research economist with the Department of Agriculture at Vanderbilt University.

William Jaffe, of Northwestern University, has been awarded a Fulbright scholarship for research in France on the life and works of Leon Walras.

Howard G. Jensen has been promoted from instructor to assistant professor of accounting in the School of Business Administration of the University of Idaho.

Frederick C. Joerg has been promoted to associate professor of economics at Duke University.

Jesse B. Johnson, formerly of the University of Wyoming, has been appointed associate professor of business administration at Louisiana State University.

John L. Johnson has been named research associate at the University of Kentucky Bureau of Business Research.

Fred M. Jones has been promoted from associate professor to professor of marketing in the College of Commerce and Business Administration of the University of Illinois.

Carey B. Joynt has been appointed assistant professor in the department of international relations at Lehigh University.

Clyde M. Kahler has been promoted to professor of insurance and has been named director of the Graduate Division of the Wharton School of Finance and Commerce.

Alfred E. Kahn, one leave from Cornell University in the current year, is at the Brookings Institution.

Lewis E. Knollmeyer, of the University of Vermont, has been recalled to duty in the United States Air Force.

Reuben H. Krolick has been promoted from instructor to assistant professor of economics in the School of Business Administration of the University of Idaho.

Herman E. Krooss, formerly in the department of economics, has been appointed associate professor in the Graduate School of Business Administration and the School of Commerce, New York University.

Ernest Kurnow has been promoted from instructor to assistant professor in the department of economics, School of Commerce, Accounts, and Finance, New York University.

Robert J. Lampman has been granted leave of absence from the University of Washington to accept an appointment at the American College in Beirut, Lebanon, under the Point Four Technical Assistance Program.

Leonard A. Lecht, of the University of Texas, has received a grant from the Ford Foundation for special study during the current academic year.

Simeon E. Leland, of Northwestern University, attended the Technical Assistants' Conference on Comparative Fiscal Administration held in Geneva under the auspices of the United Nations.

J. M. Letiche has been granted leave from the University of California to accept a Department of State appointment as visiting professor of economics at the University of Aarhus, Denmark.

Agnes Liang has been appointed instructor in economics at the Catholic University of America.

James B. Ludtke has been appointed instructor in business administration at the University of Massachusetts.

Thomas P. Lynch has been appointed research associate in the Bureau of Business Research, University of Kentucky.

Keith E. MacEachron has been appointed instructor in commerce in the School of Business Administration, University of Pittsburgh.

Fritz Machlup, of The Johns Hopkins University, participated in the International Seminars of the Austrian College held at Alpbach in the Tyrol in the past summer.

Shelley M. Mark, of the University of Washington, has accepted the position of territorial economist with the Office of Price Stabilization, Honolulu, Hawaii and is special lecturer in economics at the University of Hawaii.

Charles E. Marshall has been promoted from assistant professor to associate professor of marketing at the University of Idaho.

James W. Martin, who has been serving as fiscal management consultant to the Turkish Ministry of Finance, has resumed his work as director of the University of Kentucky Bureau of Business Research.

Daniel Marx, Jr., has resumed teaching at Dartmouth College after a term with the Economic Cooperation Administration in Paris followed by a year's residence at the Institute for Advanced Study in Princeton.

C. A. Matthews, on military leave of absence from the University of Florida, is teaching at the United States Naval Academy.

Gordon L. Mattson has resigned as assistant professor of business organization and management in the College of Business Administration at the University of Nebraska to become an industrial consultant in Lincoln, Nebraska.

Kenneth H. McCartney, formerly of the University of Minnesota, has joined the faculty of McMaster University.

Walter J. Mead, formerly Carnegie fellow in economics at the University of Oregon, has been appointed assistant professor of economics at Lewis and Clark College.

Robert I. Mehr has been promoted from associate professor to professor of economics at the University of Illinois.

Norman A. Mercer has been appointed lecturer in economics in the School of Business Administration and College of Arts and Sciences, University of Buffalo.

Frederic Meyers has resigned from the University of Texas to accept a position in the University of Illinois Institute of Labor and Industrial Relations.

H. H. Mitchell has been appointed assistant professor of economics at Alabama Polytechnic Institute.

James A. Morris has been promoted to associate professor of economics at the University of South Carolina.

Frederick W. Morrissey has resigned from the College of Business Administration of the University of Nebraska to accept an appointment with the Office of Price Stabilization in Seattle, Washington.

James J. Mullen has been appointed assistant professor of business organization and management in the College of Business Administration of the University of Nebraska.

Grady Mullennix has resigned from the University of Texas to accept a position as Supervisory Industrial Relations Analyst with the Wage Stabilization Board in Denver.

Mary E. Murphy, formerly of Hunter College, has joined the staff of the Los Angeles State College of Applied Arts and Sciences.

Eastin Nelson has been promoted to professor of economics at the University of Texas.

Douglass C. North has been appointed assistant professor of economics at the University of Washington.

Warren G. Nutter has been granted a leave from Yale University to serve with the Central Intelligence Agency.

Walter G. O'Donnell has been appointed associate professor of industry in the School of Business Administration, University of Pittsburgh.

Colin I. Park has been promoted to assistant professor of accounting in the School of Business Administration, University of Buffalo.

Lawrence Pasal, formerly head of the department of economics at Illinois College, is now assistant professor of economics at the University of Idaho.

W. Nelson Peach has been changed in status from professor of finance to professor of economics at the University of Oklahoma.

Wallace C. Peterson has been appointed instructor in economics in the College of Business Administration, University of Nebraska.

George S. Petras has resigned from the University of Georgia to accept a position as labor economist with the Wage and Hour and Public Contracts Divisions of the Department of Labor.

Robert B. Pettengill has resigned as director of the Teaching Institute of Economics at the University of Southern California to become director of Discussion Research for the Fund for Adult Education, an affiliate of the Ford Foundation.

John K. Pfahl is instructor in finance and marketing at The Ohio State University.

Murray E. Polakoff has accepted an appointment as assistant professor of economics at the University of Texas.

Wendell P. Raine, who retired from the Wharton School of Finance as professor emeritus in June 1951, has accepted an appointment as professor of law in the School of Business Administration of the University of Miami.

Irving I. Raines, formerly of the University of Illinois, has been appointed associate professor of marketing and advertising, College of Business and Public Administration, University of Maryland.

Ernest W. Randa has been appointed acting assistant professor at the University of Washington.

Robert S. Raymond has been appointed assistant professor of marketing at the Washington State College.

Robert A. Rennie has been appointed director of research for the Farm Bureau Insurance Companies of Columbus, Ohio.

Edwin P. Reubens has recently been appointed associate director of the Southeast Asia Program at Cornell University and has been granted leave for three semesters to do research and field work under a grant from the Cornell Social Science Research Center.

Frederick G. Reuss has been promoted from associate professor to professor of economics at Goucher College.

Marshall A. Robinson, on leave from Tulane University, is serving as research associate on the staff of the National Bureau of Economic Research.

Franklin R. Root has been promoted from instructor to assistant professor of economics in the College of Business and Public Administration, University of Maryland.

Marvin E. Rozen has been appointed acting assistant professor of economics at the University of Washington.

William J. Ryan has been appointed instructor in economics in the Graduate School of Social Science, Catholic University of America.

Lester C. Sartorius has been appointed assistant professor of economics at the University of Illinois.

Lloyd Saville has been promoted to associate professor of economics at Duke University.

Edwin K. Schempp has been appointed assistant professor of business administration at the University of Massachusetts.

William E. Schenk has resigned from the Agricultural and Mechanical College of Texas to accept an appointment with the Institute of American Affairs.

Hans St. Schloss has entered the German Foreign Office as chief of the economic department of the legation at Belgrade, Yugoslavia.

Edward B. Schmidt has been promoted from associate professor to professor of economics in the College of Business Administration of the University of Nebraska.

Francis H. Schott, of Princeton University, has accepted a position with the Federal Reserve Bank of New York.

Malcolm F. Severance has been appointed instructor in economics at the University of Vermont.

Harold A. Shapiro has accepted a position as assistant professor of economics at the University of Texas.

Gordon Shillinglaw has been appointed assistant professor of economics at Hamilton College.

Joseph Shister has been promoted to professor of industrial relations in the School of Business Administration of the University of Buffalo.

Carl S. Shoup, as president, attended the Conference of the International Institute of Public Finance in London in September.

John A. Shubin has been promoted to assistant professor in the department of economics, School of Commerce, Accounts, and Finance, New York University.

Allen Sievers has resigned as associate professor of business administration at the University of Massachusetts.

Leonard S. Silk has been granted leave from the Division of Housing Research, Housing and Home Finance Agency, to accept a Fulbright award for research in Norway.

Rollin H. Simonds has been promoted from associate professor to professor of business at Michigan State College.

Gerald Sirkin has been appointed instructor in economics at Yale University.

Douglas Snider has been appointed instructor in management and assistant director of the Bureau of Personnel Relations and Placement, School of Business, Indiana University.

Beryl W. Sprinkel has been appointed instructor in business administration in the School of Business, University of Chicago.

J. A. Stockfisch has been appointed assistant professor of economics at Occidental College for the current academic year.

S. Styholt has been appointed lecturer in economics in the Institute of Business Administration, University of Toronto.

Sidney Sufrin, of Syracuse University, is serving as head of an economic mission to Spain under the auspices of the Economic Cooperation Administration.

J. Wilmer Sundelson has been granted a leave by the International Division of the Ford Motor Company to serve as consultant to the special representative in Europe of the Economic Cooperation Administration.

George Suzuki, formerly of the University of Minnesota, has joined the staff of the Planning Research Division of the United States Air Force in Washington, D.C.

V. V. Sweeney has been promoted from associate professor to professor of insurance at the University of Florida.

Ralph Swick has been appointed faculty lecturer in accounting at Indiana University.

Robert Tannenbaum has been promoted to associate professor of personnel management and industrial relations in the School of Business Administration, University of California at Los Angeles.

Milton C. Taylor has been appointed lecturer in the School of Public Administration, University of Puerto Rico.

Perry D. Teitelbaum, formerly of Union College and Illinois Institute of Technology, has joined the Bureau of Labor Statistics as an economist.

Ralph Thayer has been promoted from associate professor to professor of economics at State College of Washington.

K. M. Thompson has been appointed assistant professor of economics at Louisiana State University.

W. H. Thompson has been promoted from associate professor to professor of industrial economics at Iowa State College.

Peter R. Toscano has been appointed instructor in economics at the University of Connecticut.

Robert Triffin has been appointed professor of economics at Yale University.

VACANCIES AND APPLICATIONS

The Association is glad to render service to applicants who wish to make known their availability for positions in the field of economics and to administrative officers of colleges and universities and to others who are seeking to fill vacancies. The officers of the Association take no responsibility for making a selection among the applicants or following up the results. The Secretary's Office will merely afford a central point for clearing inquiries; and the *Review* will publish in this section brief description of vacancies announced and of applications submitted (with necessary editorial changes). Since the Association has no other way of knowing whether or not this section is performing a real service, the Secretary would appreciate receiving notification of appointments made as a result of these announcements. It is optional with those submitting such announcements to publish name and address or to use a key number. Deadlines for the four issues of the *Review* are February 1, May 1, August 1, and November 1.

Communications should be addressed to: The Secretary, American Economic Association, Northwestern University, Evanston, Illinois.

Vacancies

Investment counsel: For our investment counsel work, we would like to hire a man of outstanding intellectual ability to be trained in the study of investment opportunities and in the valuation of investment securities. The only requirements are that he should have a degree in economics, statistics, or finance and he should have a university record ranking him in the top 10 per cent of his class. A lady might be considered for this work if she were outstanding. However, it is desirable, also, that the man should have some experience in the purchase and sale of stocks and bonds and that he should be exempt from call for military service. Templeton, Dobbrow & Vance, Inc., 30 Rockefeller Plaza, New York 20, N.Y.

Labor and government regulation: Ph.D. in economics and business, with special interest in labor and government regulation, wanted for senior position in department of business and economics of small Midwestern university.

Economists Available for Positions

International economics, money and banking, government and business, labor and industrial relations, theory, history of economic thought: Man, 36, married, B.A., M.A., Ph.D., Columbia University. Five years of top level research with the U.S. Government, including FEA and State Department; 6 years of college teaching, including graduate courses; consultant to Puerto Rican Government, 2 consulting engineering firms, and a Congressional committee; has written 4 books and has 3 others in progress and under contract with publishers. Now employed in private industry; wishes to return to academic life or government research. E243

Advertising, marketing, salesmanship, retailing, merchandising, small business operation, business psychology: Woman, 34, married, M.S., New York University, School of Retailing, working towards Ph.D. Six years as copy writer and sales manager with leading department stores and mail order houses; 2 years of college teaching in field; 2 years in government. Presently associated with advertising agency but desires return to academic life. Available in February or September, 1952 E254

Economic theory, history of economic thought, business cycles, capital and labor problems, international trade, comparative economic systems: Man, 45, European, three German degrees, including doctor's. Fifteen years of university teaching experience; original contribution to the theory of economics; author of several works in three languages; excellent criticisms and recommendations from many university professors. Wishes position in economics. E317

Economic principles, thought, labor problems, management, marketing, investments: Man, 38, married, Ph.D. course requirements completed and dissertation in progress. Currently teaching at small Eastern college. Desires teaching position outside New York City. Available in September, 1952. E318

Public finance (including fiscal policy), money and banking, corporation finance, international commercial and economic policies, general economics: Man, married, Ph.D., LL.D. Extensive experience in teaching, research, and local, state, and national government service, retiring from well-known American university. Lecturing in foreign university, 1951-52. Available in September, 1952. E385

Economic structure of modern China, Chinese-Russian trade relations, economic development of Russian Far East and Central Asia: Man, 47, Ph.D., Berlin University. Taught 13 years at Yenching University and 4 years at a large Eastern university. Substantial research work in the field. Desires teaching, research, or advisory position. E392

Economic theory, history of economic thought, accounting, finance: Man, 40, married, M.B.A., candidate for Ph.D., New York University, C.P.A. Partner in New York firm. Seeks summer teaching position. E393

Economic theory and principles, labor economics, business cycles, history of economic thought, money and banking, corporation finance: Man, 27, B.S., M.A., Ph.D. residence completed at a large Eastern university. Two years of teaching experience. Available in January, 1952. E394

Economics, economic history, geography: Man, 33, British, permanent U.S. visa, B.A., M.A., Cambridge University, B.Com., B.Sc.Econ., M.Sc., Ph.D. thesis in process, University of London; work in political science, University of Chicago. Undergraduate, graduate, and adult teaching experience, United States, Britain, and Germany; 7 years in British Army and R.A.F.; Cambridge scholarship holder; familiar with British, Irish, French, and Belgian economies; international public speaking; currently assistant professor of history; résumé supplied on request. Seeks U.S. or Canadian business, research bureau, or teaching offer. Available immediately. E395

Labor economics, industrial pensions, social security, insurance, statistics, industrial relations, social legislation, elementary economics: Man, 34, married, Ph.D. Four years of experience in research and teaching; desires industrial pensions specialist, teaching, research, or statistical analyst position. E396

Economic theory, money and banking, international economics, statistics, economic thought, welfare economics, investments, economics of industry: Man, 28, B.A. (Cantab.), M.A., University of California. Industrial and business experience. Seeks research or teaching position. E397

Insurance, international economics, foreign trade, economic history, business law, marketing, investments: Man, 44, Ph.D. Associate professor, college near Los Angeles; also University of California. Practical experience in insurance and foreign trade. Available for academic appointment, East or West Coast. September, 1952. E398